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Poulsen

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(54) **META-CONFIGURATION OF PROFILES**

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(51) **Int. Cl.**

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G06F 3/048	(2013.01)
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CPC ***G06F 17/30507*** (2013.01); ***G06F 3/048*** (2013.01); ***G06F 3/1255*** (2013.01); ***G06F 17/30371*** (2013.01); ***G06F 17/30864*** (2013.01); ***G06Q 90/00*** (2013.01)

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USPC 707/694

See application file for complete search history.

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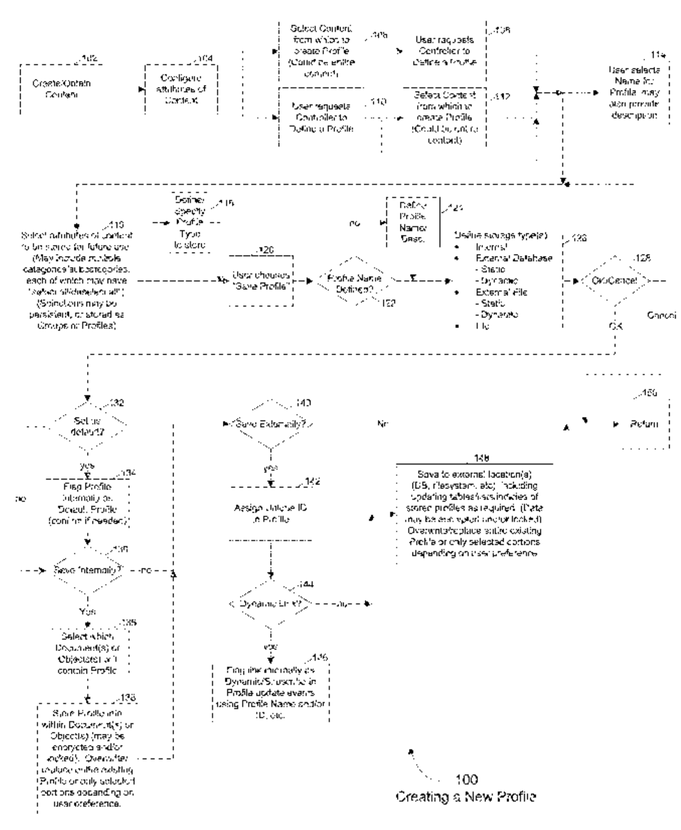
Primary Examiner — Pavan Mamillapalli

(57) **ABSTRACT**

Disclosed are methods for creating, applying, using and retrieving profile information that includes attributes that may be stored separately from, or with, the content to which the profiles are being applied. In this manner, profiles can be shared in various environments and across various applications. Attributes that have corresponding attributes in other content can be applied to the other content, as long as each of the attributes is valid. In vehicle applications, the profile can be generated in a first vehicle, stored in a profile repository, and subsequently applied to a second vehicle.

20 Claims, 27 Drawing Sheets



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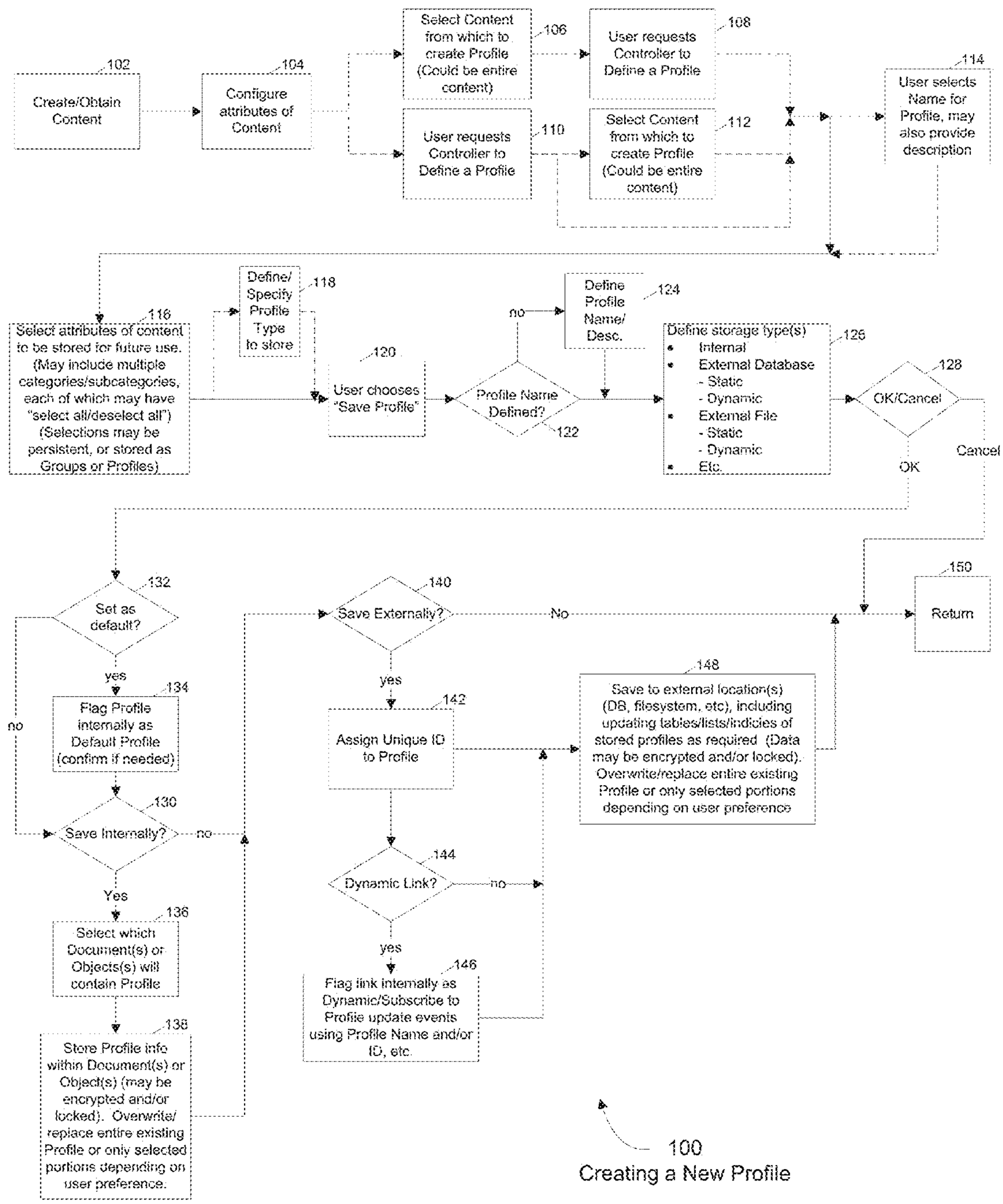
102
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104
Configure attributes of Content
Select Content from which to create Profile (Could be entire content)
106
User requests Controller to Define a Profile
110
User requests Controller to Define a Profile
108
Select Content from which to create Profile (Could be entire content)
112
114
User selects Name for Profile, may also provide description
116
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
Define/ Specify Profile Type to store
118
120
User chooses "Save Profile"
Profile Name Defined?
122
no
Define Profile Name/ Desc.
124
Define storage type(s)
• Internal
• External Database
- Static
- Dynamic
• External File
- Static
- Dynamic
• Etc.
126
OK/Cancel
128
OK
Cancel
132
Set as default?
yes
no
134
Flag Profile internally as Default Profile (confirm if needed)
130
Save Internally?
no
Yes
136
Select which Document(s) or Objects(s) will contain Profile
138
Store Profile info within Document(s) or Object(s) (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
140
Save Externally?
No
yes
142
Assign Unique ID to Profile
144
Dynamic Link?
no
yes
146
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
148
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference
150
Return
100
Creating a New Profile

Fig. 1A

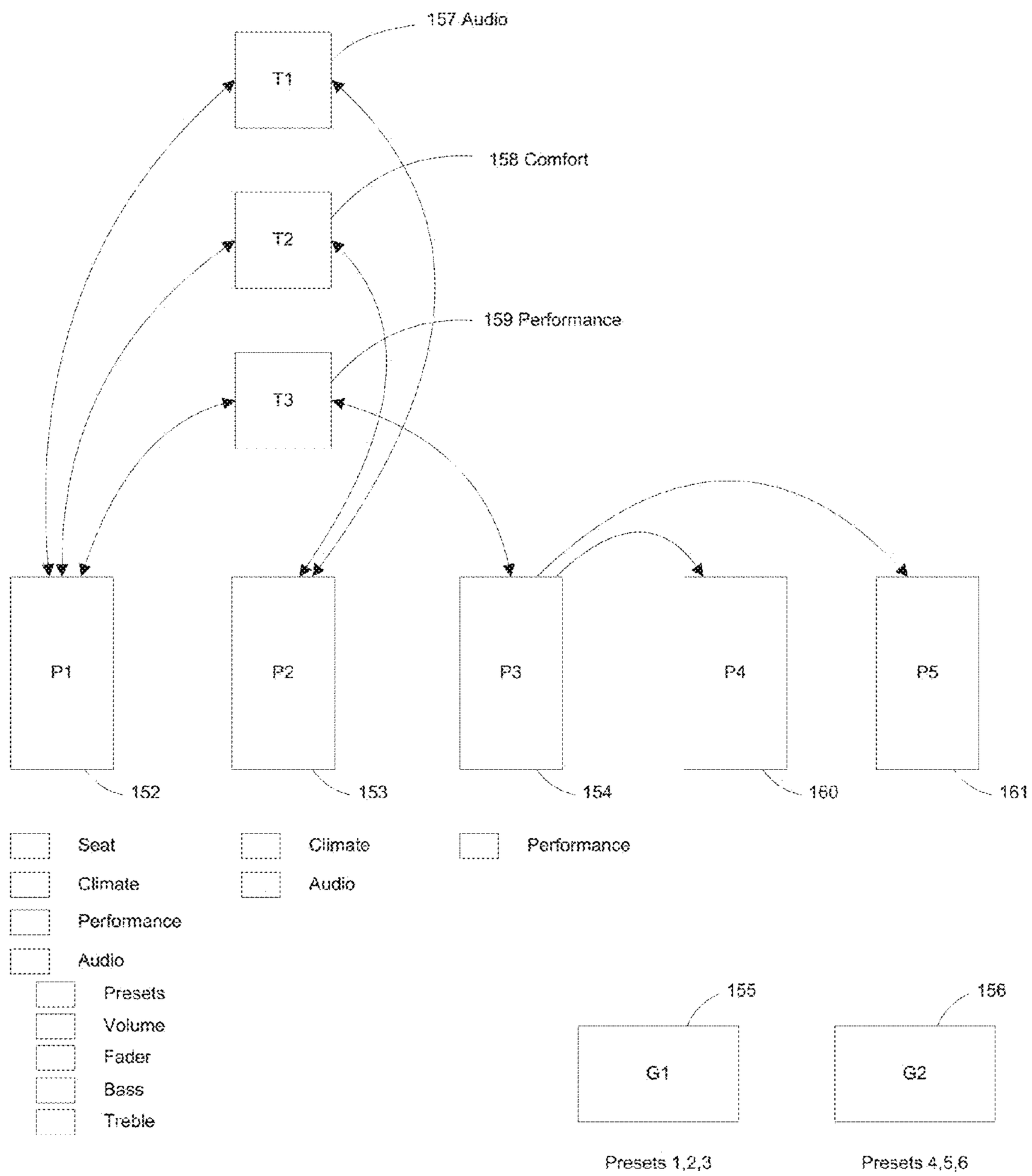

157 Audio
T1
158 Comfort
T2
159 Performance
T3
P1
P2
P3
P4
P5
152
153
154
160
161
Seat
Climate
Performance
Climate
Audio
Performance
Audio
Presets
Volume
Fader
Bass
Treble
155
156
G1
G2
Presets 1,2,3
Presets 4,5,6

Fig. 1B

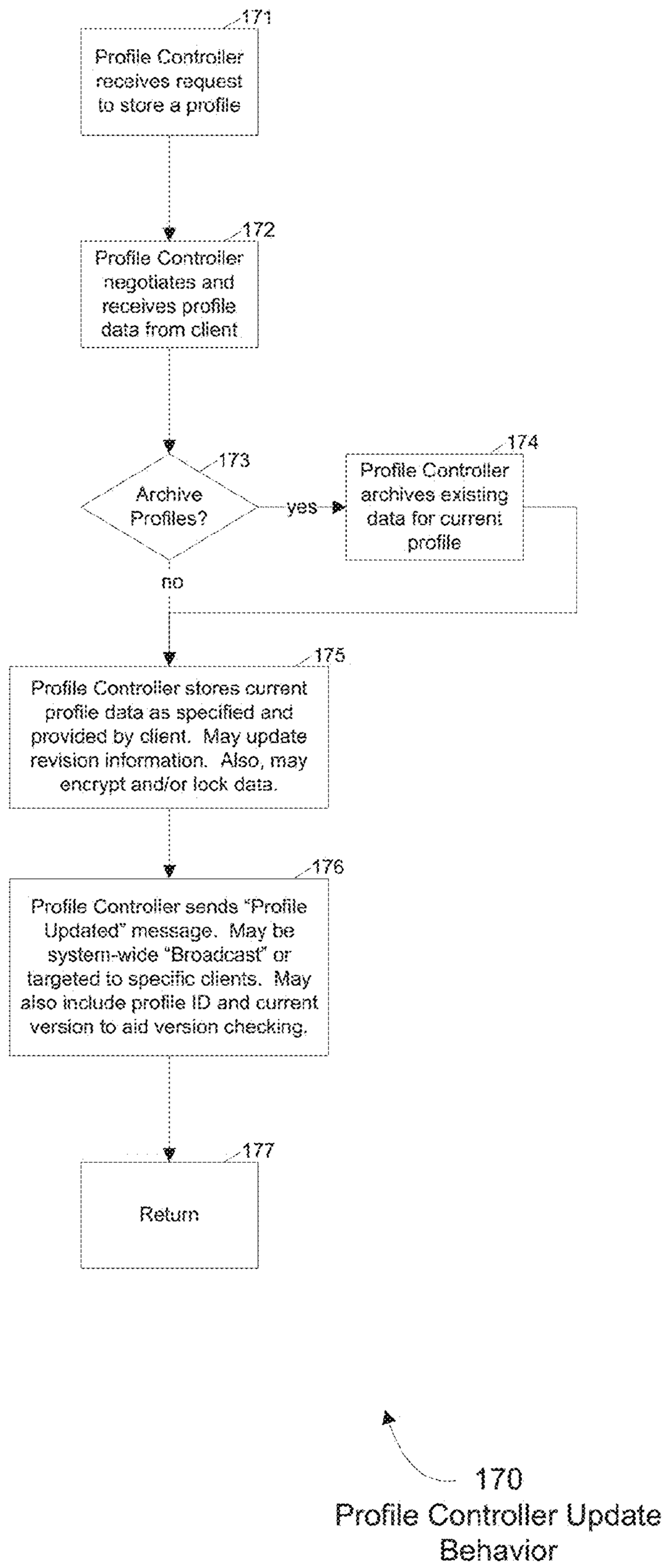

171
Profile Controller receives request to store a profile
172
Profile Controller negotiates and receives profile data from client
173
Archive Profiles?
yes
174
Profile Controller archives existing data for current profile
no
175
Profile Controller stores current profile data as specified and provided by client. May update revision information. Also, may encrypt and/or lock data.
176
Profile Controller sends "Profile Updated" message. May be system-wide "Broadcast" or targeted to specific clients. May also include profile ID and current version to aid version checking.
177
Return
170
Profile Controller Update Behavior

Fig. 1C

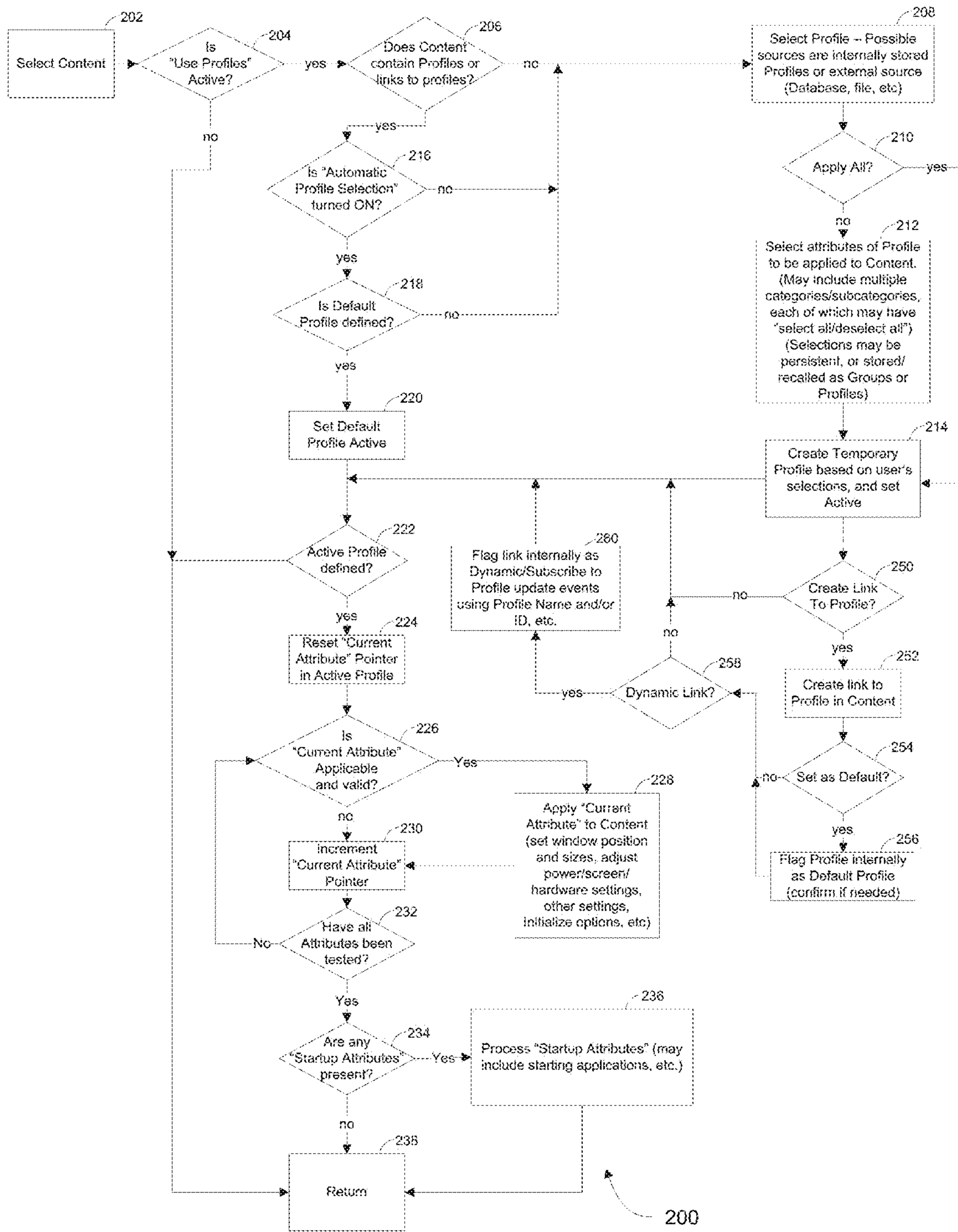

202
Select Content
204
Is "Use Profiles" Active?
yes
no
206
Does Content contain Profiles or links to profiles?
yes
no
208
Select Profile -- Possible sources are internally stored Profiles or external source (Database, file, etc)
210
Apply All?
yes
no
212
Select attributes of Profile to be applied to Content. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
214
Create Temporary Profile based on user's selections, and set Active
216
Is "Automatic Profile Selection" turned ON?
no
yes
218
Is Default Profile defined?
no
yes
220
Set Default Profile Active
222
Active Profile defined?
yes
224
Reset "Current Attribute" Pointer in Active Profile
226
Is "Current Attribute" Applicable and valid?
Yes
no
228
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, initialize options, etc)
230
Increment "Current Attribute" Pointer
232
Have all Attributes been tested?
No
Yes
234
Are any "Startup Attributes" present?
Yes
no
236
Process "Startup Attributes" (may include starting applications, etc.)
238
Return
250
Create Link To Profile?
no
yes
252
Create link to Profile in Content
254
Set as Default?
no
yes
256
Flag Profile internally as Default Profile (confirm if needed)
258
Dynamic Link?
yes
no
260
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
200
Recalling a Profile -- Selecting Content First

Fig. 2

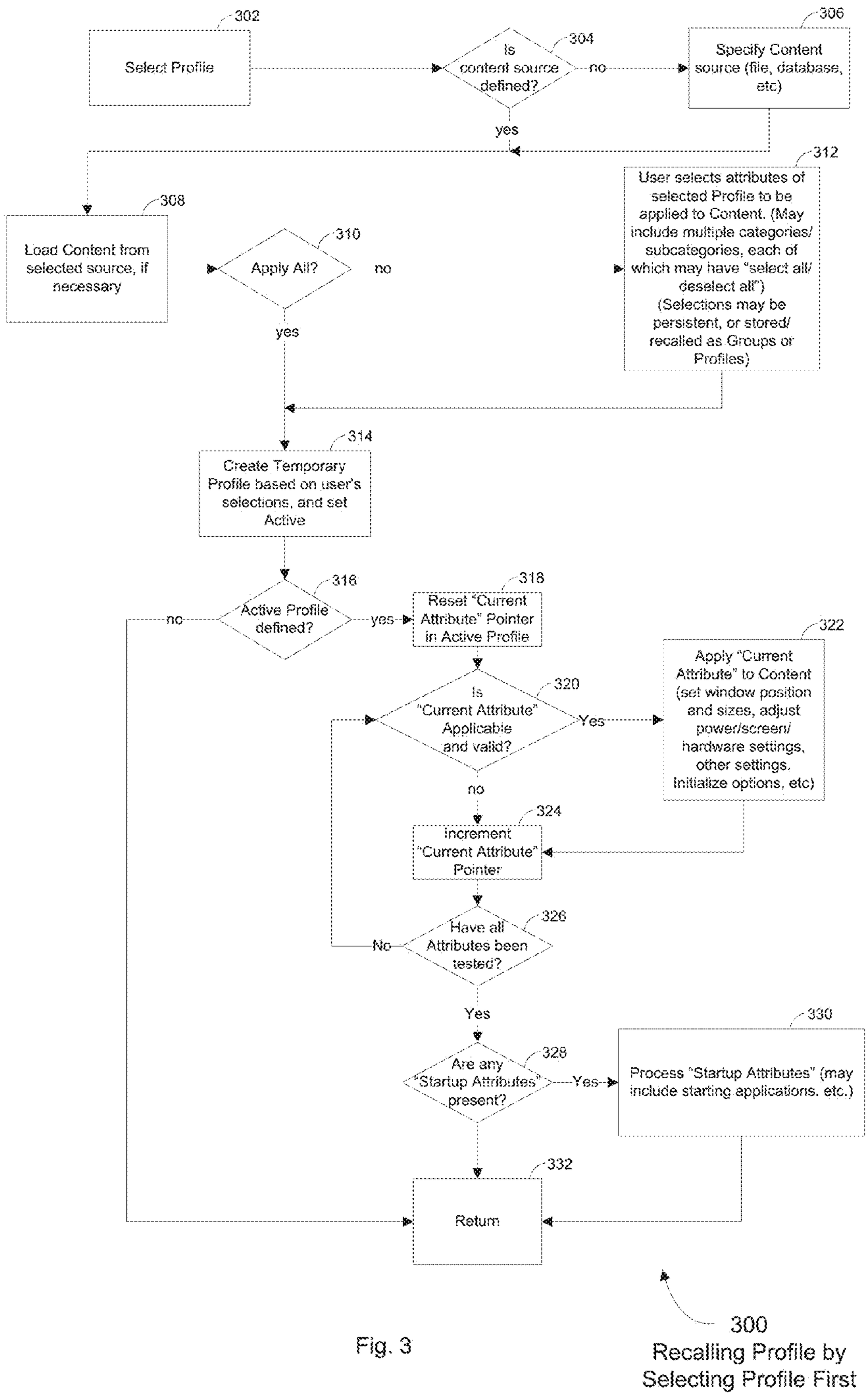

302
Select Profile
304
Is content source defined?
no
306
Specify Content source (file, database, etc)
yes
308
Load Content from selected source, if necessary
310
Apply All?
no
yes
312
User selects attributes of selected Profile to be applied to Content. (May include multiple categories/ subcategories, each of which may have "select all/ deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
314
Create Temporary Profile based on user's selections, and set Active
316
Active Profile defined?
no
yes
318
Reset "Current Attribute" Pointer in Active Profile
320
Is "Current Attribute" Applicable and valid?
Yes
no
322
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, initialize options, etc)
324
Increment "Current Attribute" Pointer
326
Have all Attributes been tested?
No
Yes
328
Are any "Startup Attributes" present?
Yes
330
Process "Startup Attributes" (may include starting applications, etc.)
332
Return
300
Recalling Profile by Selecting Profile First

Fig. 3

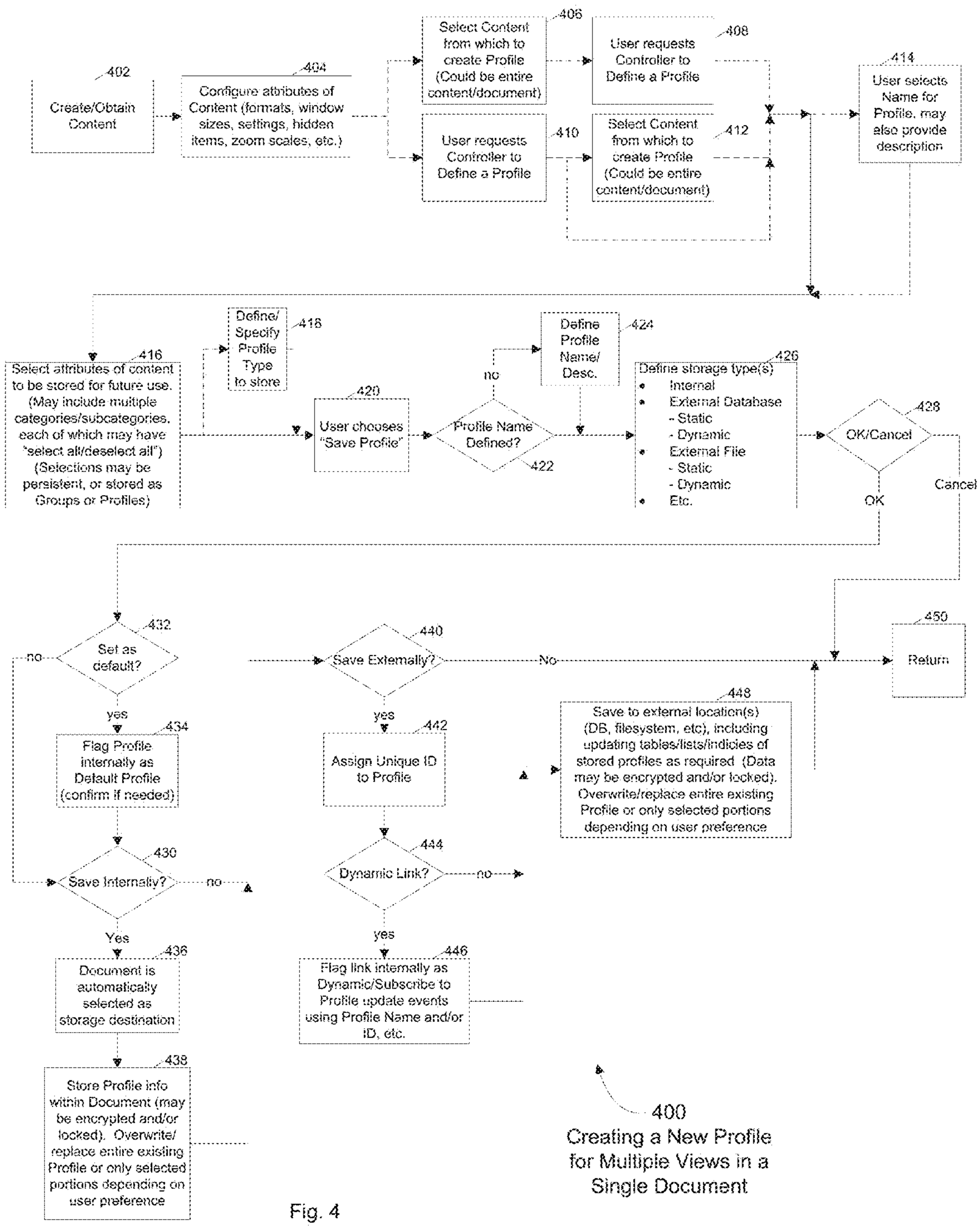

402
Create/Obtain Content
404
Configure attributes of Content (formats, window sizes, settings, hidden items, zoom scales, etc.)
406
Select Content from which to create Profile (Could be entire content/document)
408
User requests Controller to Define a Profile
410
User requests Controller to Define a Profile
412
Select Content from which to create Profile (Could be entire content/document)
414
User selects Name for Profile, may also provide description
416
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
418
Define/ Specify Profile Type to store
420
User chooses "Save Profile"
422
Profile Name Defined?
no
424
Define Profile Name/ Desc.
426
Define storage type(s)
• Internal
• External Database
- Static
- Dynamic
• External File
- Static
- Dynamic
• Etc.
428
OK/Cancel
OK
Cancel
432
Set as default?
no
yes
434
Flag Profile internally as Default Profile (confirm if needed)
430
Save Internally?
no
Yes
436
Document is automatically selected as storage destination
438
Store Profile info within Document (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference
440
Save Externally?
No
yes
442
Assign Unique ID to Profile
444
Dynamic Link?
no
yes
446
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
448
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference
450
Return
400
Creating a New Profile for Multiple Views in a Single Document

Fig. 4

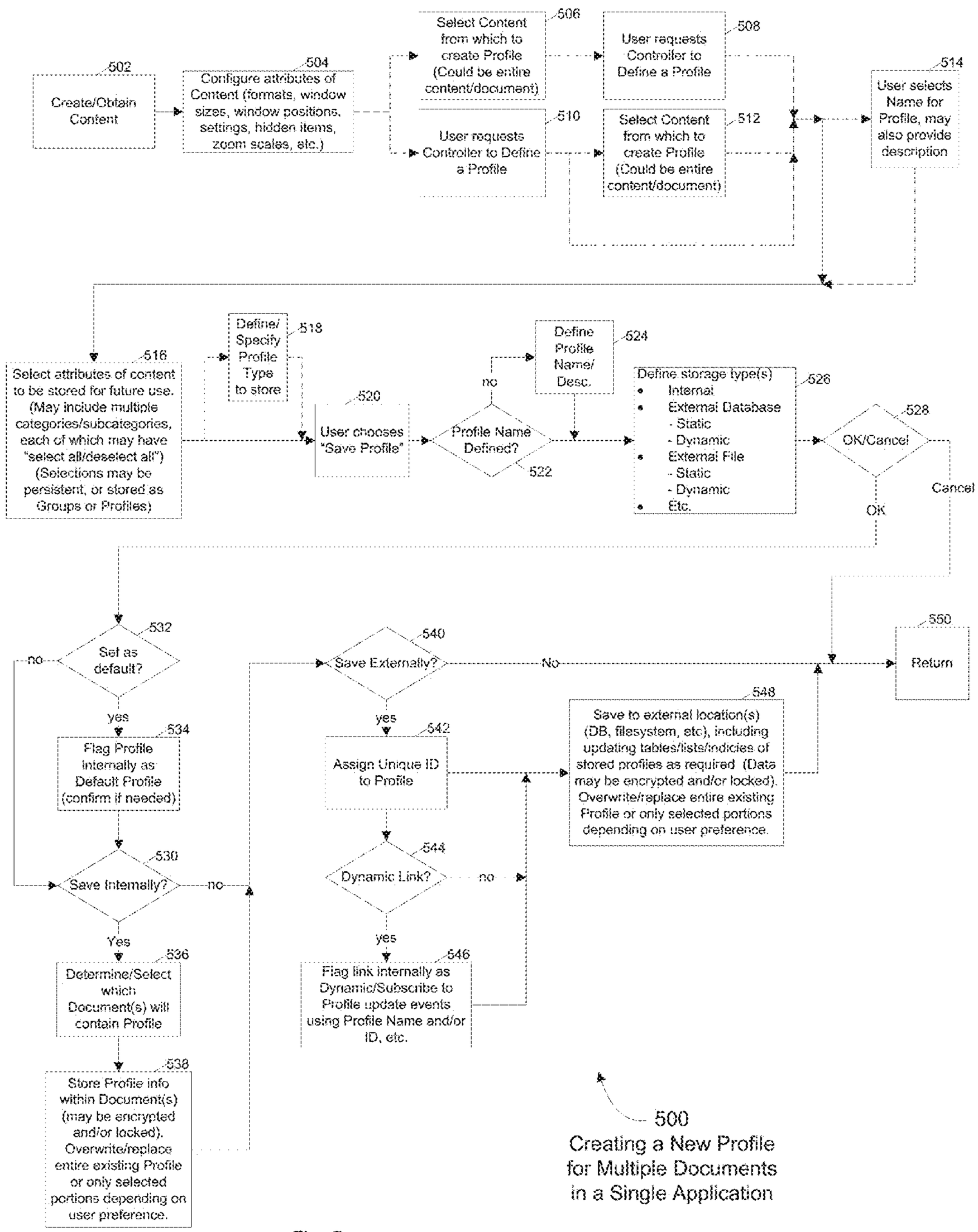

502
Create/Obtain Content
504
Configure attributes of Content (formats, window sizes, window positions, settings, hidden items, zoom scales, etc.)
506
Select Content from which to create Profile (Could be entire content/document)
508
User requests Controller to Define a Profile
510
User requests Controller to Define a Profile
512
Select Content from which to create Profile (Could be entire content/document)
514
User selects Name for Profile, may also provide description
516
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
518
Define/ Specify Profile Type to store
520
User chooses "Save Profile"
522
Profile Name Defined?
no
524
Define Profile Name/ Desc.
526
Define storage type(s)
• Internal
• External Database
- Static
- Dynamic
• External File
- Static
- Dynamic
• Etc.
528
OK/Cancel
OK
Cancel
532
Set as default?
no
yes
534
Flag Profile internally as Default Profile (confirm if needed)
530
Save Internally?
no
Yes
536
Determine/Select which Document(s) will contain Profile
538
Store Profile info within Document(s) (may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference.
540
Save Externally?
No
yes
542
Assign Unique ID to Profile
544
Dynamic Link?
no
yes
546
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
548
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference.
550
Return
500
Creating a New Profile for Multiple Documents in a Single Application

Fig. 5

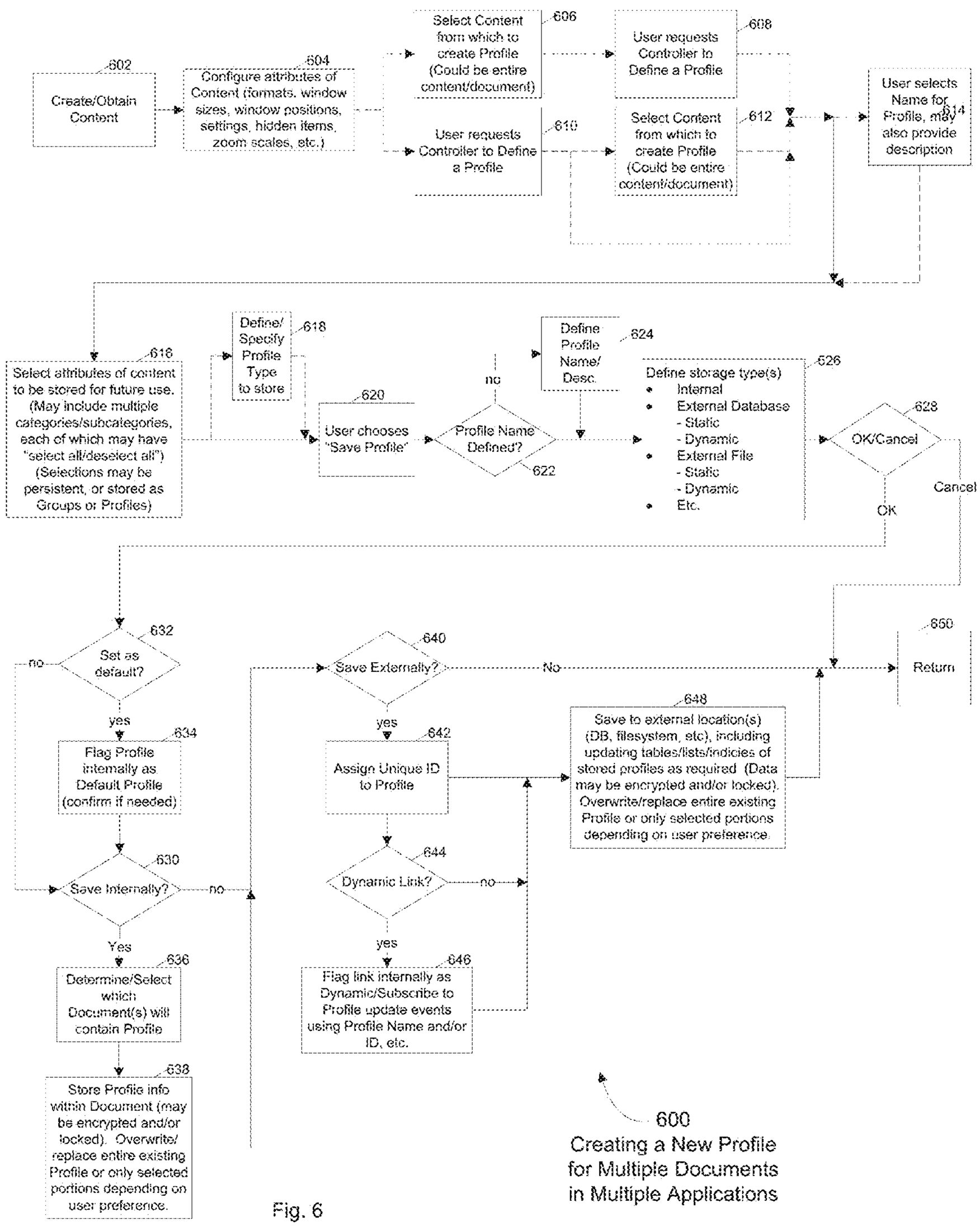

602
Create/Obtain Content
604
Configure attributes of Content (formats, window sizes, window positions, settings, hidden items, zoom scales, etc.)
606
Select Content from which to create Profile (Could be entire content/document)
608
User requests Controller to Define a Profile
610
User requests Controller to Define a Profile
612
Select Content from which to create Profile (Could be entire content/document)
614
User selects Name for Profile, may also provide description
616
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
618
Define/ Specify Profile Type to store
620
User chooses "Save Profile"
622
Profile Name Defined?
no
624
Define Profile Name/ Desc.
626
Define storage type(s)
Internal
External Database
- Static
- Dynamic
External File
- Static
- Dynamic
Etc.
628
OK/Cancel
OK
Cancel
632
Set as default?
no
yes
634
Flag Profile internally as Default Profile (confirm if needed)
630
Save Internally?
no
Yes
636
Determine/Select which Document(s) will contain Profile
638
Store Profile info within Document (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
640
Save Externally?
No
yes
642
Assign Unique ID to Profile
644
Dynamic Link?
no
yes
646
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
648
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference.
650
Return
600
Creating a New Profile for Multiple Documents in Multiple Applications

Fig. 6

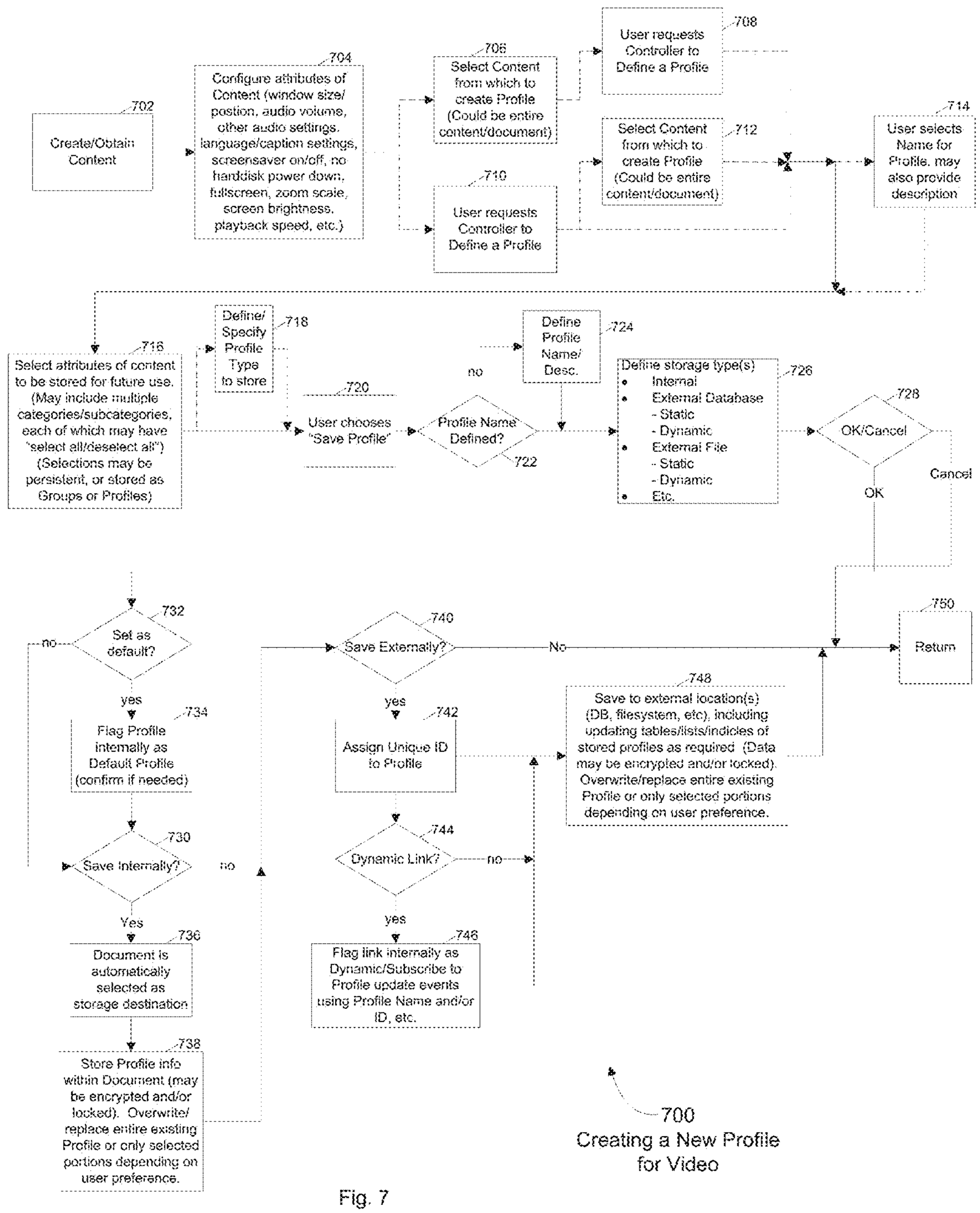

702
Create/Obtain Content
704
Configure attributes of Content (window size/ postion, audio volume, other audio settings, language/caption settings, screensaver on/off, no harddisk power down, fullscreen, zoom scale, screen brightness, playback speed, etc.)
706
Select Content from which to create Profile (Could be entire content/document)
708
User requests Controller to Define a Profile
710
User requests Controller to Define a Profile
712
Select Content from which to create Profile (Could be entire content/document)
714
User selects Name for Profile, may also provide description
716
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
718
Define/ Specify Profile Type to store
720
User chooses "Save Profile"
722
Profile Name Defined?
no
724
Define Profile Name/ Desc.
726
Define storage type(s)
• Internal
• External Database
- Static
- Dynamic
• External File
- Static
- Dynamic
• Etc.
728
OK/Cancel
OK
Cancel
732
Set as default?
no
yes
734
Flag Profile internally as Default Profile (confirm if needed)
730
Save Internally?
no
Yes
736
Document is automatically selected as storage destination
738
Store Profile info within Document (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
740
Save Externally?
No
yes
742
Assign Unique ID to Profile
744
Dynamic Link?
no
yes
746
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
748
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference.
750
Return
700
Creating a New Profile for Video

Fig. 7

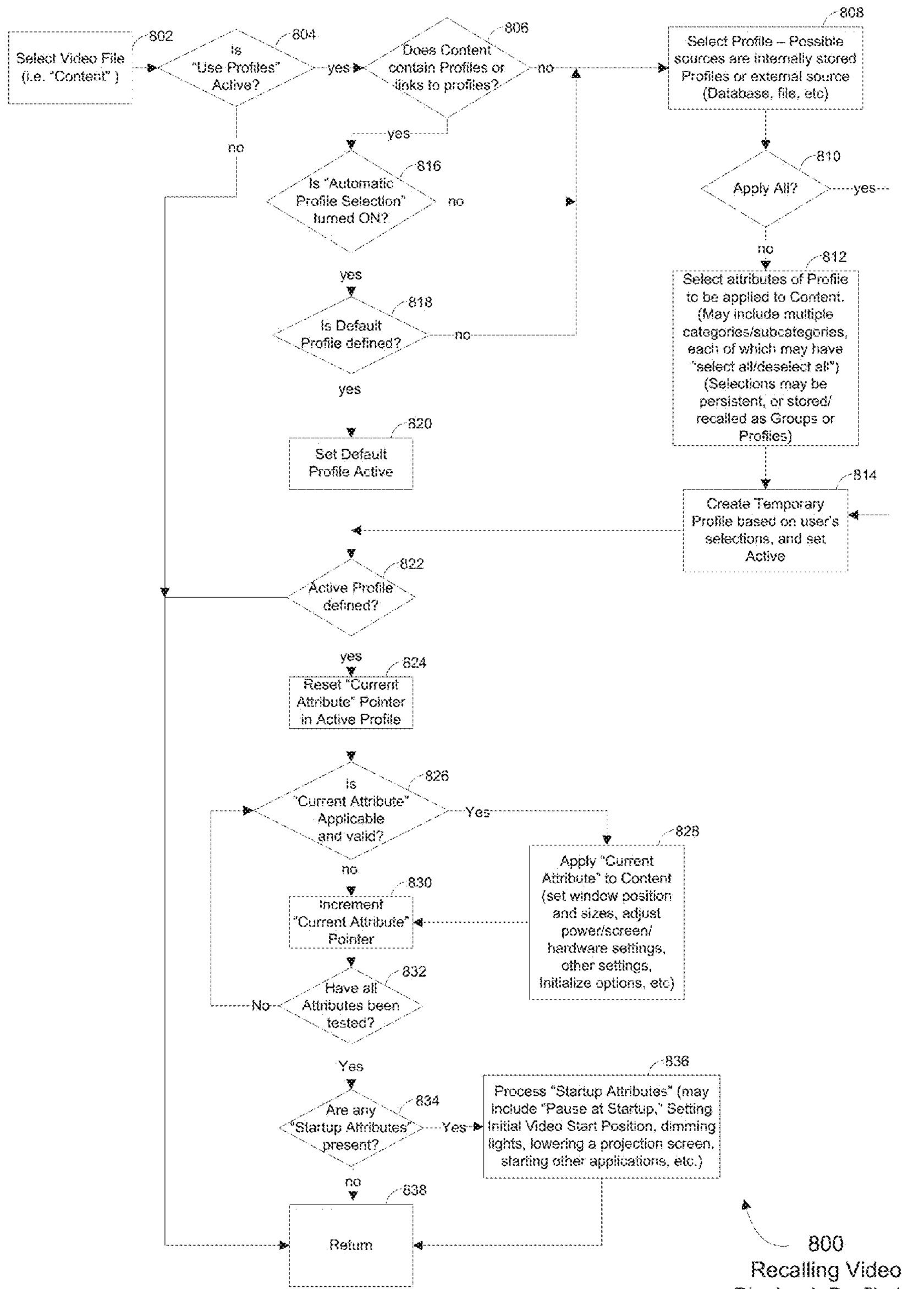

Select Video File (i.e. "Content")
802
Is "Use Profiles" Active?
804
yes
no
Does Content contain Profiles or links to profiles?
806
yes
no
Is "Automatic Profile Selection" turned ON?
816
yes
no
Is Default Profile defined?
818
yes
no
Set Default Profile Active
820
Select Profile – Possible sources are internally stored Profiles or external source (Database, file, etc)
808
Apply All?
810
yes
no
Select attributes of Profile to be applied to Content. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
812
Create Temporary Profile based on user's selections, and set Active
814
Active Profile defined?
822
yes
Reset "Current Attribute" Pointer in Active Profile
824
Is "Current Attribute" Applicable and valid?
826
Yes
no
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, Initialize options, etc)
828
Increment "Current Attribute" Pointer
830
Have all Attributes been tested?
832
No
Yes
Are any "Startup Attributes" present?
834
Yes
no
Process "Startup Attributes" (may include "Pause at Startup," Setting Initial Video Start Position, dimming lights, lowering a projection screen, starting other applications, etc.)
836
Return
838
800
Recalling Video Playback Profile by Selecting Video File

Fig. 8

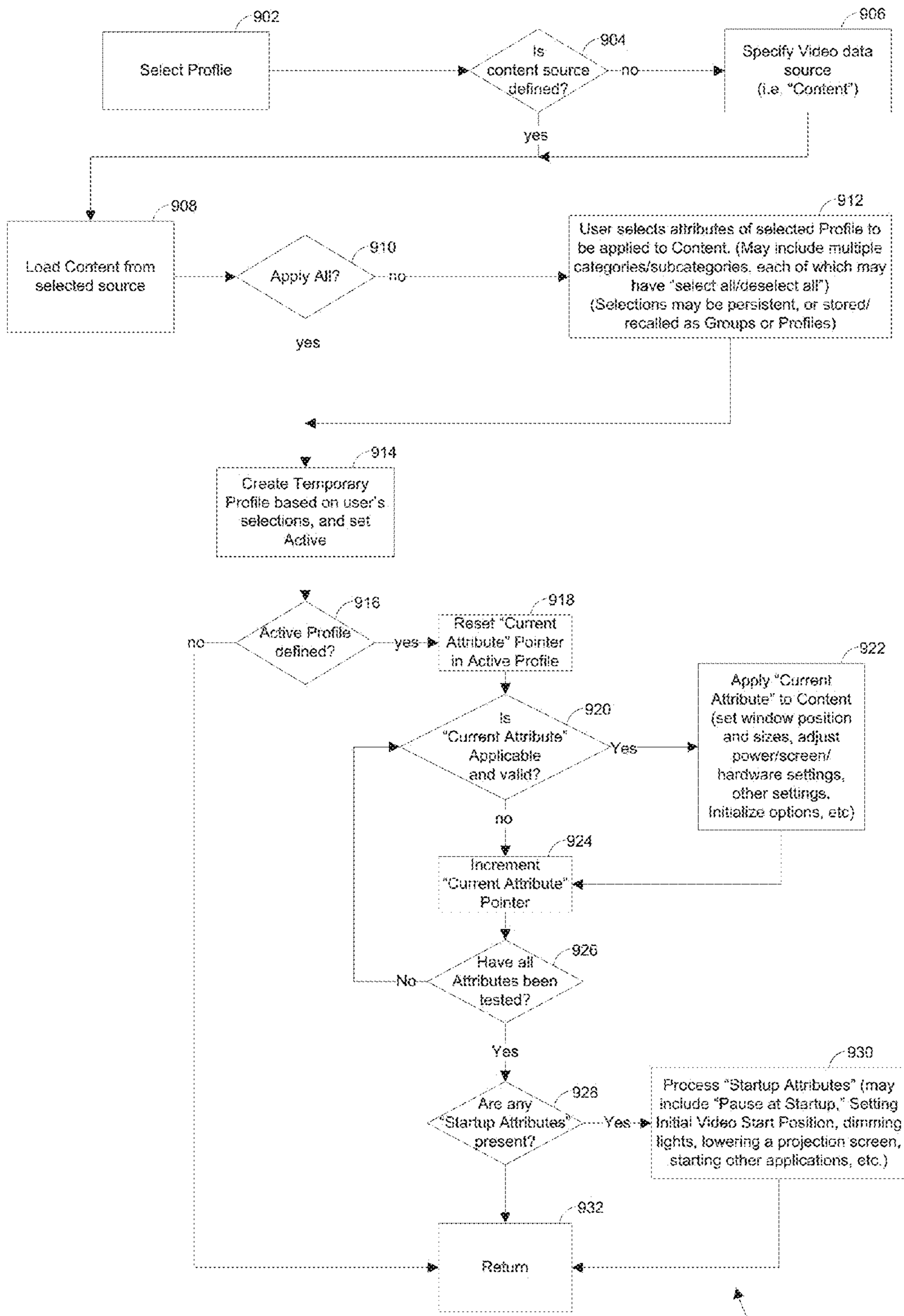

902
Select Profile
904
Is content source defined?
no
yes
906
Specify Video data source (i.e. "Content")
908
Load Content from selected source
910
Apply All?
no
yes
912
User selects attributes of selected Profile to be applied to Content. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
914
Create Temporary Profile based on user's selections, and set Active
916
Active Profile defined?
no
yes
918
Reset "Current Attribute" Pointer in Active Profile
920
Is "Current Attribute" Applicable and valid?
Yes
no
922
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, Initialize options, etc)
924
Increment "Current Attribute" Pointer
926
Have all Attributes been tested?
No
Yes
928
Are any "Startup Attributes" present?
Yes
930
Process "Startup Attributes" (may include "Pause at Startup," Setting Initial Video Start Position, dimming lights, lowering a projection screen, starting other applications, etc.)
932
Return
900
Recalling Video Playback Profile by Selecting Profile

Fig. 9

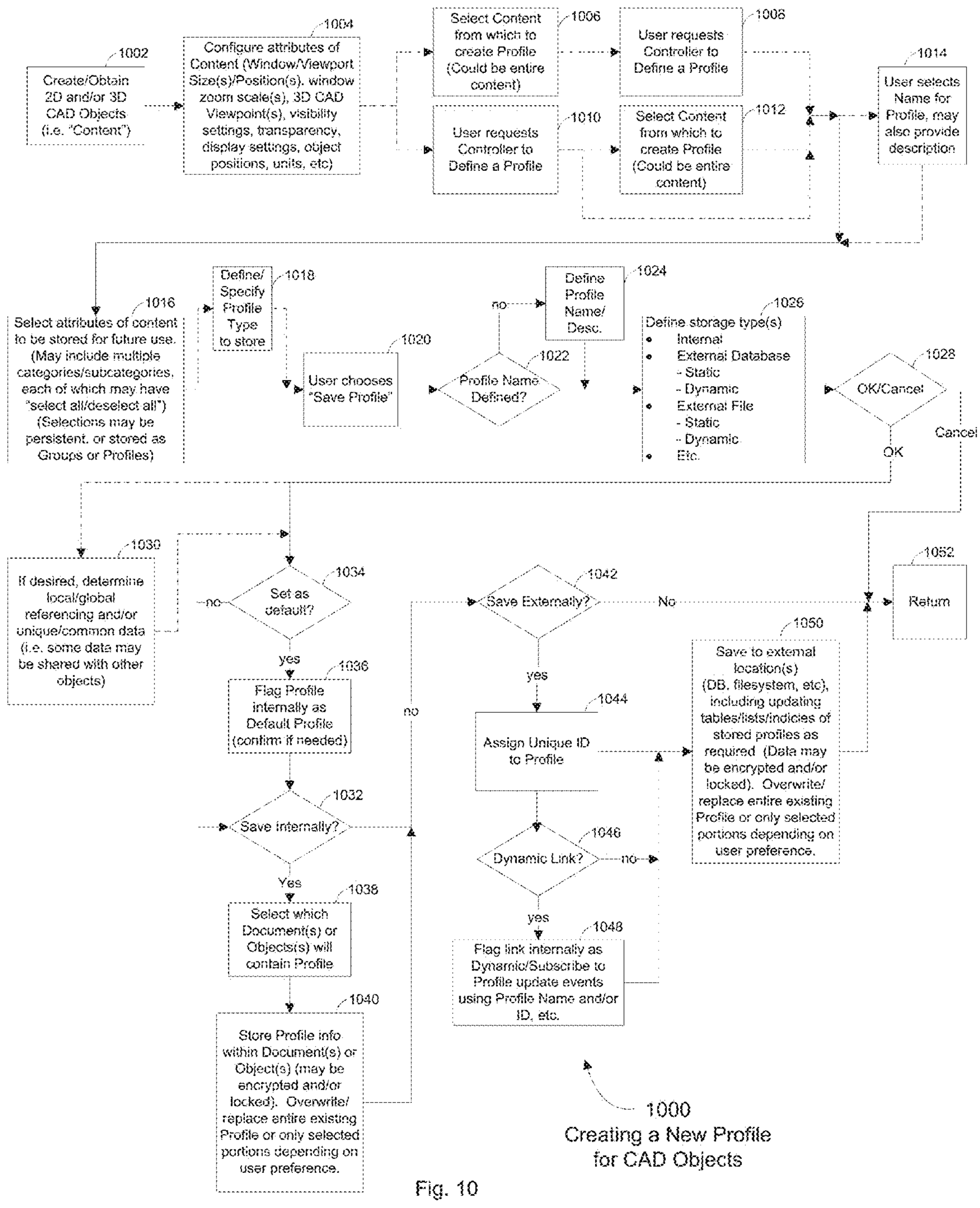

1002
Create/Obtain 2D and/or 3D CAD Objects (i.e. "Content")
1004
Configure attributes of Content (Window/Viewport Size(s)/Position(s), window zoom scale(s), 3D CAD Viewpoint(s), visibility settings, transparency, display settings, object positions, units, etc)
Select Content from which to create Profile (Could be entire content)
1006
User requests Controller to Define a Profile
1008
User requests Controller to Define a Profile
1010
Select Content from which to create Profile (Could be entire content)
1012
1014
User selects Name for Profile, may also provide description
1016
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
Define/ Specify Profile Type to store
1018
1020
User chooses "Save Profile"
no
Define Profile Name/ Desc.
1024
1022
Profile Name Defined?
1026
Define storage type(s)
Internal
External Database
- Static
- Dynamic
External File
- Static
- Dynamic
Etc.
1028
OK/Cancel
OK
Cancel
1030
If desired, determine local/global referencing and/or unique/common data (i.e. some data may be shared with other objects)
1034
Set as default?
no
yes
1036
Flag Profile internally as Default Profile (confirm if needed)
1032
Save Internally?
Yes
1038
Select which Document(s) or Objects(s) will contain Profile
1040
Store Profile info within Document(s) or Object(s) (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
no
1042
Save Externally?
No
yes
1044
Assign Unique ID to Profile
1046
Dynamic Link?
no
yes
1048
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
1050
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
1052
Return
1000
Creating a New Profile for CAD Objects

Fig. 10

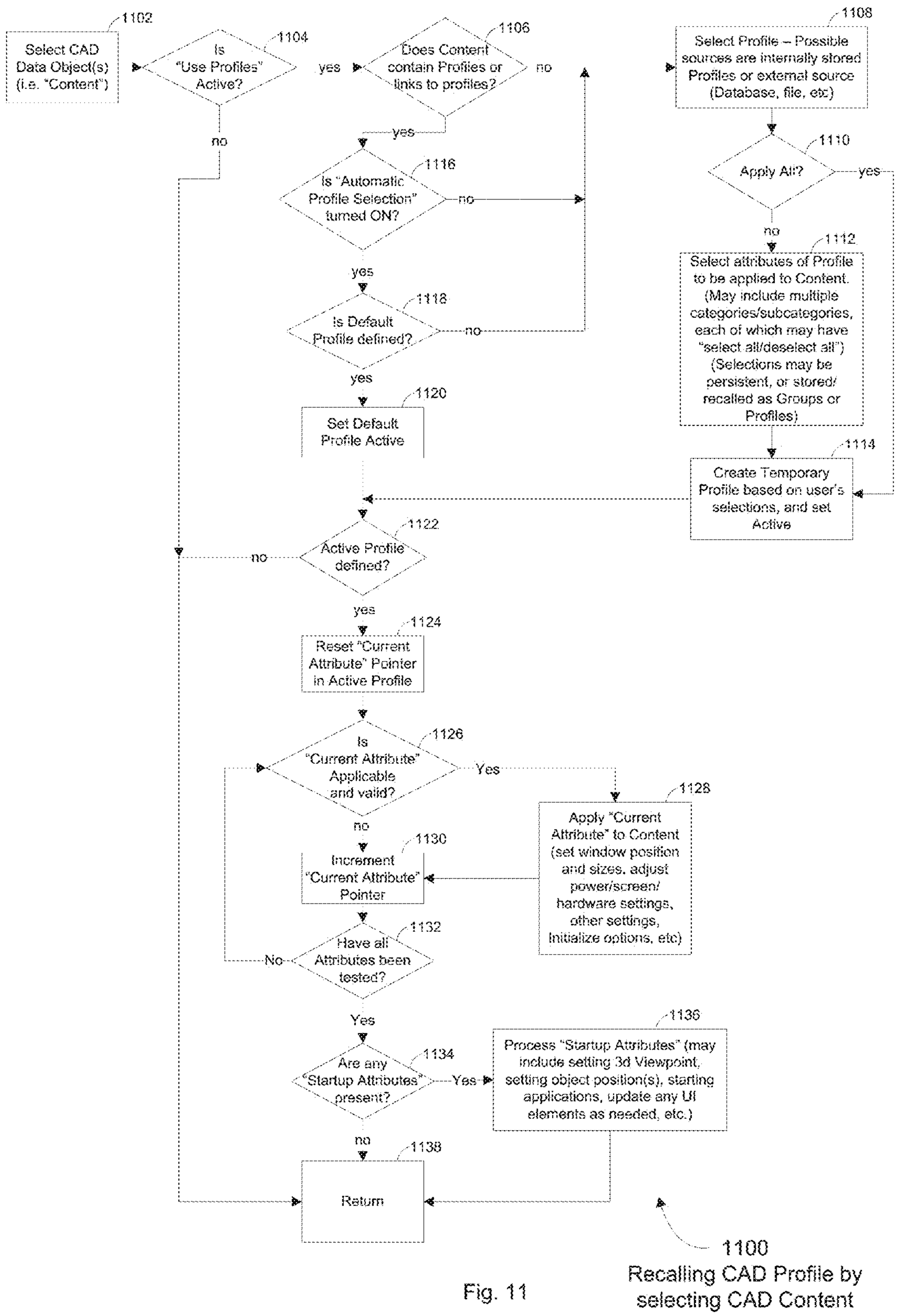

1102
Select CAD Data Object(s) (i.e. "Content")
1104
Is "Use Profiles" Active?
yes
no
1106
Does Content contain Profiles or links to profiles?
yes
no
1108
Select Profile – Possible sources are internally stored Profiles or external source (Database, file, etc)
1110
Apply All?
yes
no
1112
Select attributes of Profile to be applied to Content. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
1114
Create Temporary Profile based on user's selections, and set Active
1116
Is "Automatic Profile Selection" turned ON?
no
yes
1118
Is Default Profile defined?
no
yes
1120
Set Default Profile Active
1122
Active Profile defined?
no
yes
1124
Reset "Current Attribute" Pointer in Active Profile
1126
Is "Current Attribute" Applicable and valid?
Yes
no
1128
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, Initialize options, etc)
1130
Increment "Current Attribute" Pointer
1132
Have all Attributes been tested?
No
Yes
1134
Are any "Startup Attributes" present?
Yes
no
1136
Process "Startup Attributes" (may include setting 3d Viewpoint, setting object position(s), starting applications, update any UI elements as needed, etc.)
1138
Return
1100
Recalling CAD Profile by selecting CAD Content

Fig. 11

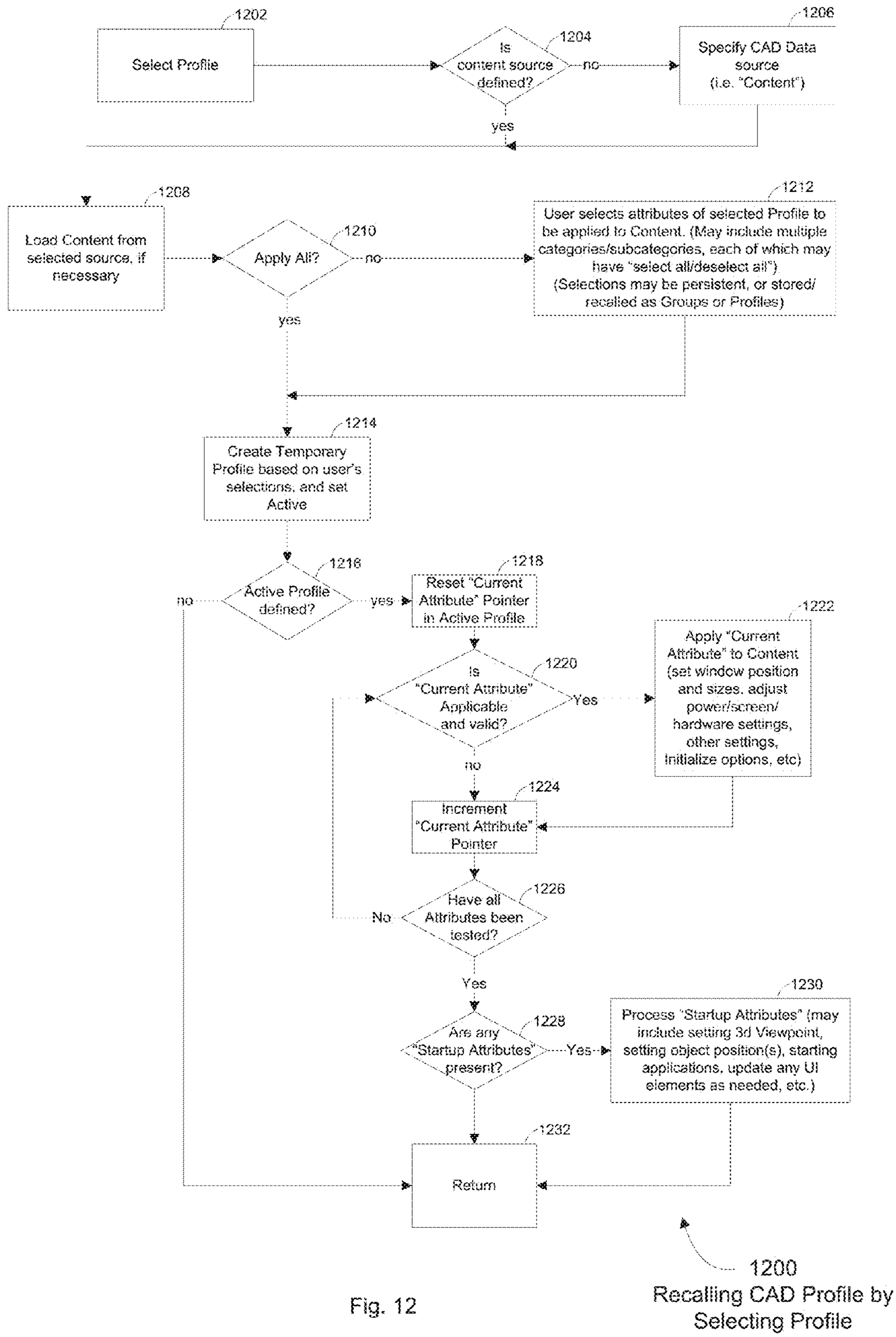

1202
Select Profile
1204
Is content source defined?
no
yes
1206
Specify CAD Data source (i.e. "Content")
1208
Load Content from selected source, if necessary
1210
Apply All?
no
yes
1212
User selects attributes of selected Profile to be applied to Content. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
1214
Create Temporary Profile based on user's selections, and set Active
1216
Active Profile defined?
no
yes
1218
Reset "Current Attribute" Pointer in Active Profile
1220
Is "Current Attribute" Applicable and valid?
Yes
no
1222
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, initialize options, etc)
1224
Increment "Current Attribute" Pointer
1226
Have all Attributes been tested?
No
Yes
1228
Are any "Startup Attributes" present?
Yes
1230
Process "Startup Attributes" (may include setting 3d Viewpoint, setting object position(s), starting applications, update any UI elements as needed, etc.)
1232
Return
1200
Recalling CAD Profile by Selecting Profile

Fig. 12

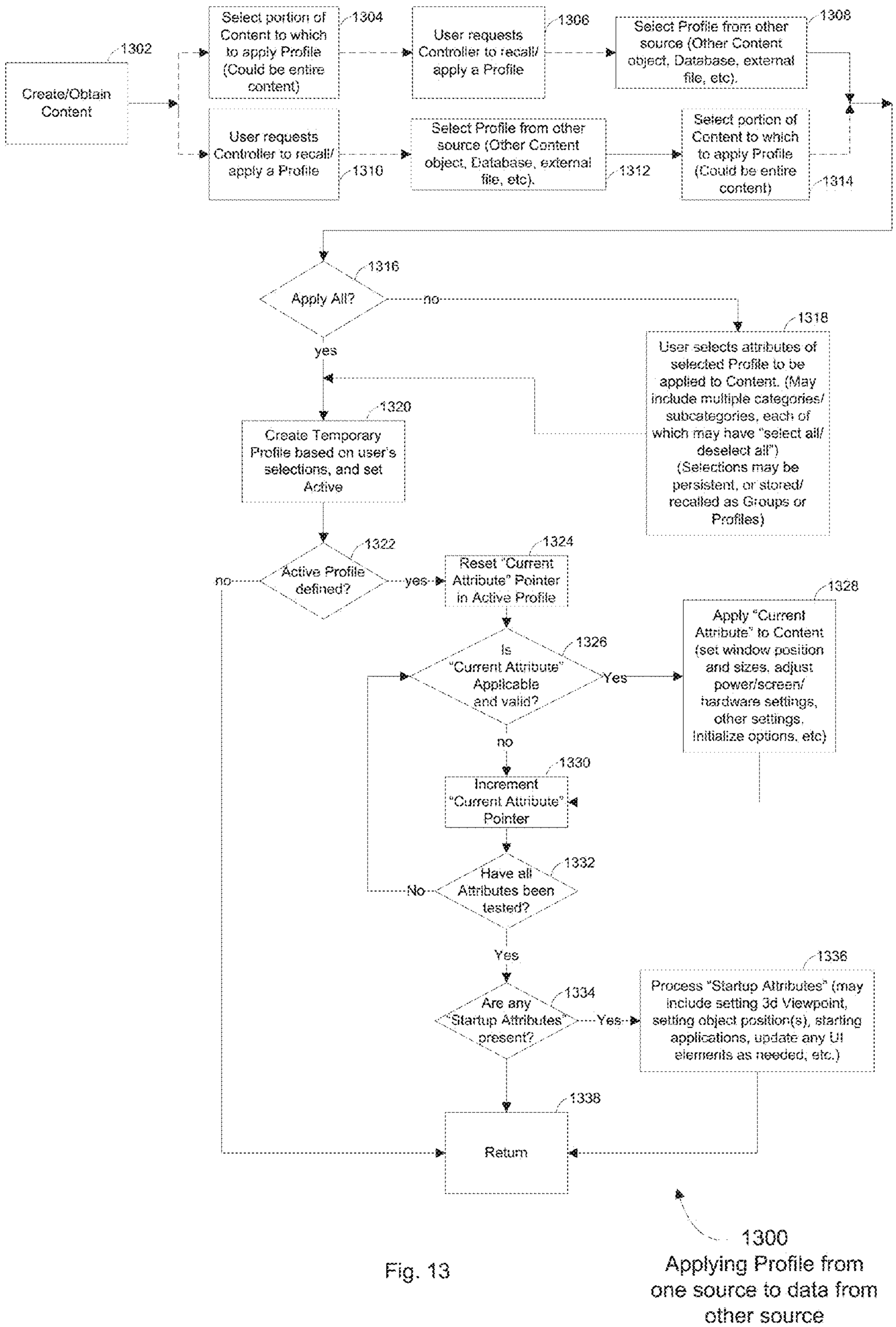

1302
Create/Obtain Content
1304
Select portion of Content to which to apply Profile (Could be entire content)
1306
User requests Controller to recall/ apply a Profile
1308
Select Profile from other source (Other Content object, Database, external file, etc).
1310
User requests Controller to recall/ apply a Profile
1312
Select Profile from other source (Other Content object, Database, external file, etc).
1314
Select portion of Content to which to apply Profile (Could be entire content)
1316
Apply All?
no
yes
1318
User selects attributes of selected Profile to be applied to Content. (May include multiple categories/ subcategories, each of which may have "select all/ deselect all") (Selections may be persistent, or stored/ recalled as Groups or Profiles)
1320
Create Temporary Profile based on user's selections, and set Active
1322
Active Profile defined?
no
yes
1324
Reset "Current Attribute" Pointer in Active Profile
1326
Is "Current Attribute" Applicable and valid?
Yes
no
1328
Apply "Current Attribute" to Content (set window position and sizes, adjust power/screen/ hardware settings, other settings, initialize options, etc)
1330
Increment "Current Attribute" Pointer
1332
Have all Attributes been tested?
No
Yes
1334
Are any "Startup Attributes" present?
Yes
1336
Process "Startup Attributes" (may include setting 3d Viewpoint, setting object position(s), starting applications, update any UI elements as needed, etc.)
1338
Return
1300
Applying Profile from one source to data from other source

Fig. 13

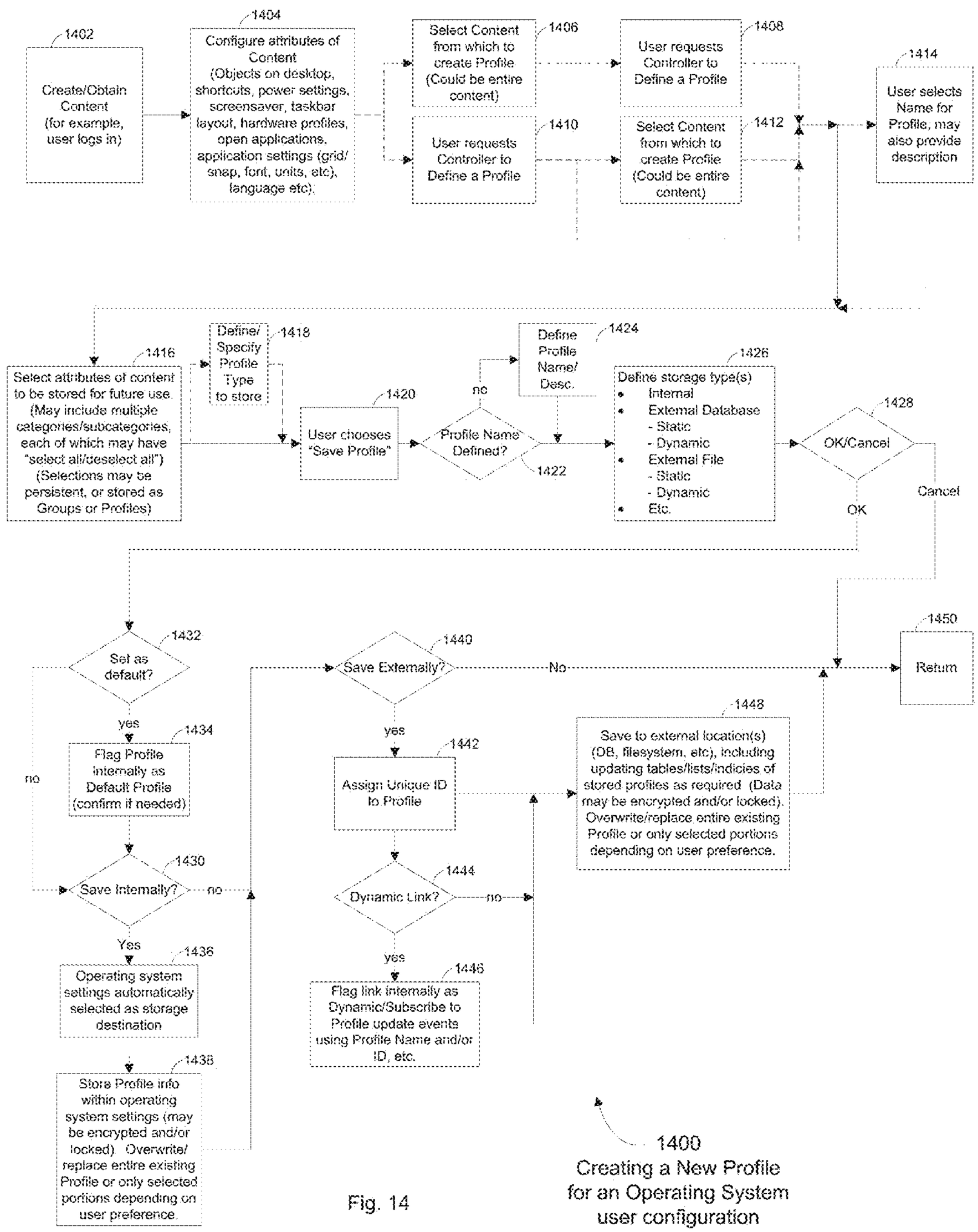

1402
Create/Obtain Content (for example, user logs in)
1404
Configure attributes of Content (Objects on desktop, shortcuts, power settings, screensaver, taskbar layout, hardware profiles, open applications, application settings (grid/ snap, font, units, etc), language etc).
Select Content from which to create Profile (Could be entire content)
1406
User requests Controller to Define a Profile
1408
User requests Controller to Define a Profile
1410
Select Content from which to create Profile (Could be entire content)
1412
User selects Name for Profile, may also provide description
1414
1416
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
Define/ Specify Profile Type to store
1418
User chooses "Save Profile"
1420
Profile Name Defined?
1422
no
Define Profile Name/ Desc.
1424
Define storage type(s)
• Internal
• External Database
- Static
- Dynamic
• External File
- Static
- Dynamic
• Etc.
1426
OK/Cancel
1428
OK
Cancel
Set as default?
1432
yes
no
Flag Profile internally as Default Profile (confirm if needed)
1434
Save Internally?
1430
no
Yes
Operating system settings automatically selected as storage destination
1436
Store Profile info within operating system settings (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
1438
Save Externally?
1440
No
yes
Assign Unique ID to Profile
1442
Dynamic Link?
1444
no
yes
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
1446
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference.
1448
Return
1450
1400
Creating a New Profile for an Operating System user configuration

Fig. 14

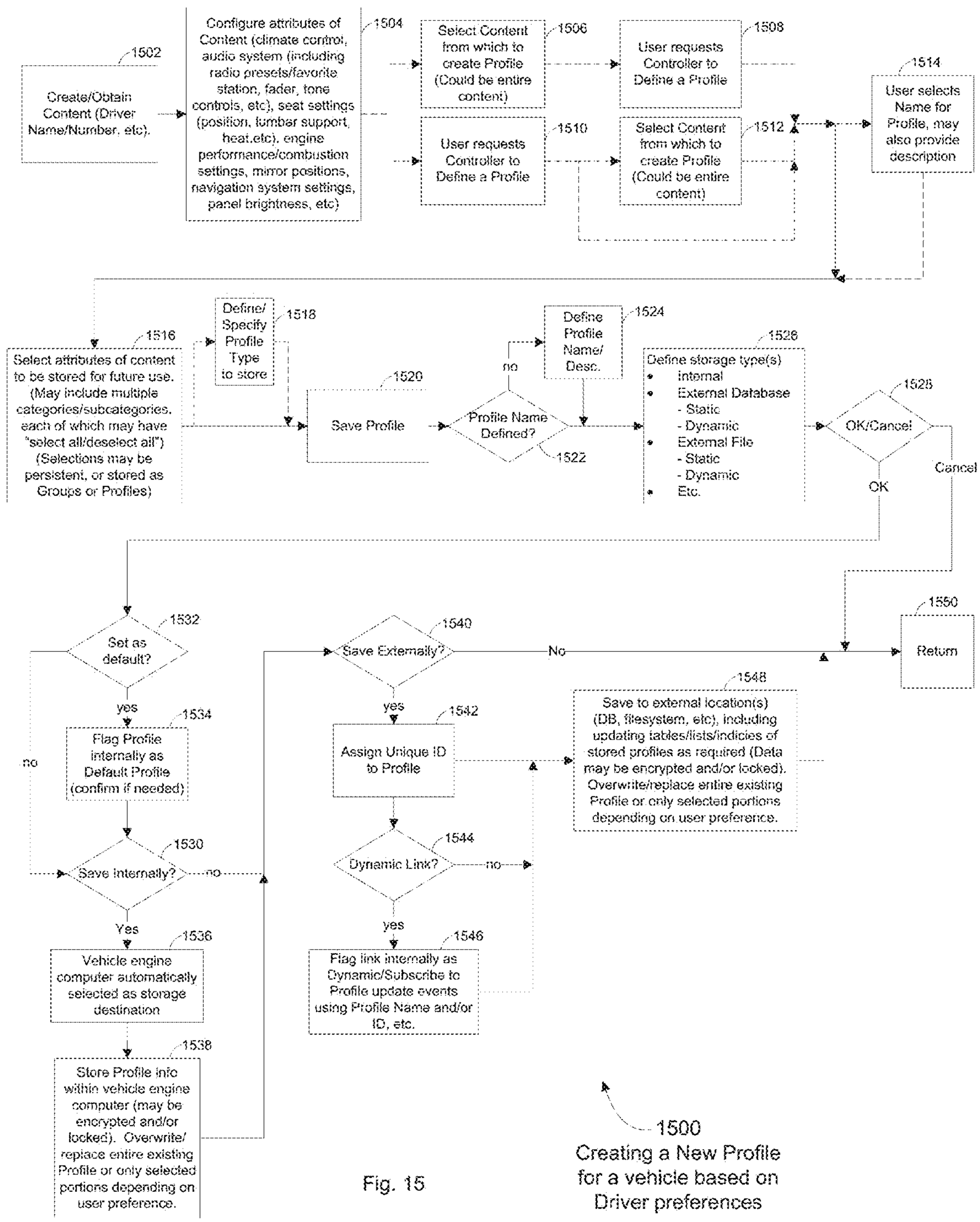

1502
Create/Obtain Content (Driver Name/Number, etc).
1504
Configure attributes of Content (climate control, audio system (including radio presets/favorite station, fader, tone controls, etc), seat settings (position, lumbar support, heat,etc), engine performance/combustion settings, mirror positions, navigation system settings, panel brightness, etc)
1506
Select Content from which to create Profile (Could be entire content)
1508
User requests Controller to Define a Profile
1510
User requests Controller to Define a Profile
1512
Select Content from which to create Profile (Could be entire content)
1514
User selects Name for Profile, may also provide description
1516
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
1518
Define/ Specify Profile Type to store
1520
Save Profile
1522
Profile Name Defined?
no
1524
Define Profile Name/ Desc.
1526
Define storage type(s)
• Internal
• External Database
- Static
- Dynamic
• External File
- Static
- Dynamic
• Etc.
1528
OK/Cancel
OK
Cancel
1532
Set as default?
yes
no
1534
Flag Profile internally as Default Profile (confirm if needed)
1530
Save Internally?
no
Yes
1536
Vehicle engine computer automatically selected as storage destination
1538
Store Profile info within vehicle engine computer (may be encrypted and/or locked). Overwrite/ replace entire existing Profile or only selected portions depending on user preference.
1540
Save Externally?
No
yes
1542
Assign Unique ID to Profile
1544
Dynamic Link?
no
yes
1546
Flag link internally as Dynamic/Subscribe to Profile update events using Profile Name and/or ID, etc.
1548
Save to external location(s) (DB, filesystem, etc), including updating tables/lists/indicies of stored profiles as required (Data may be encrypted and/or locked). Overwrite/replace entire existing Profile or only selected portions depending on user preference.
1550
Return
1500
Creating a New Profile for a vehicle based on Driver preferences

Fig. 15

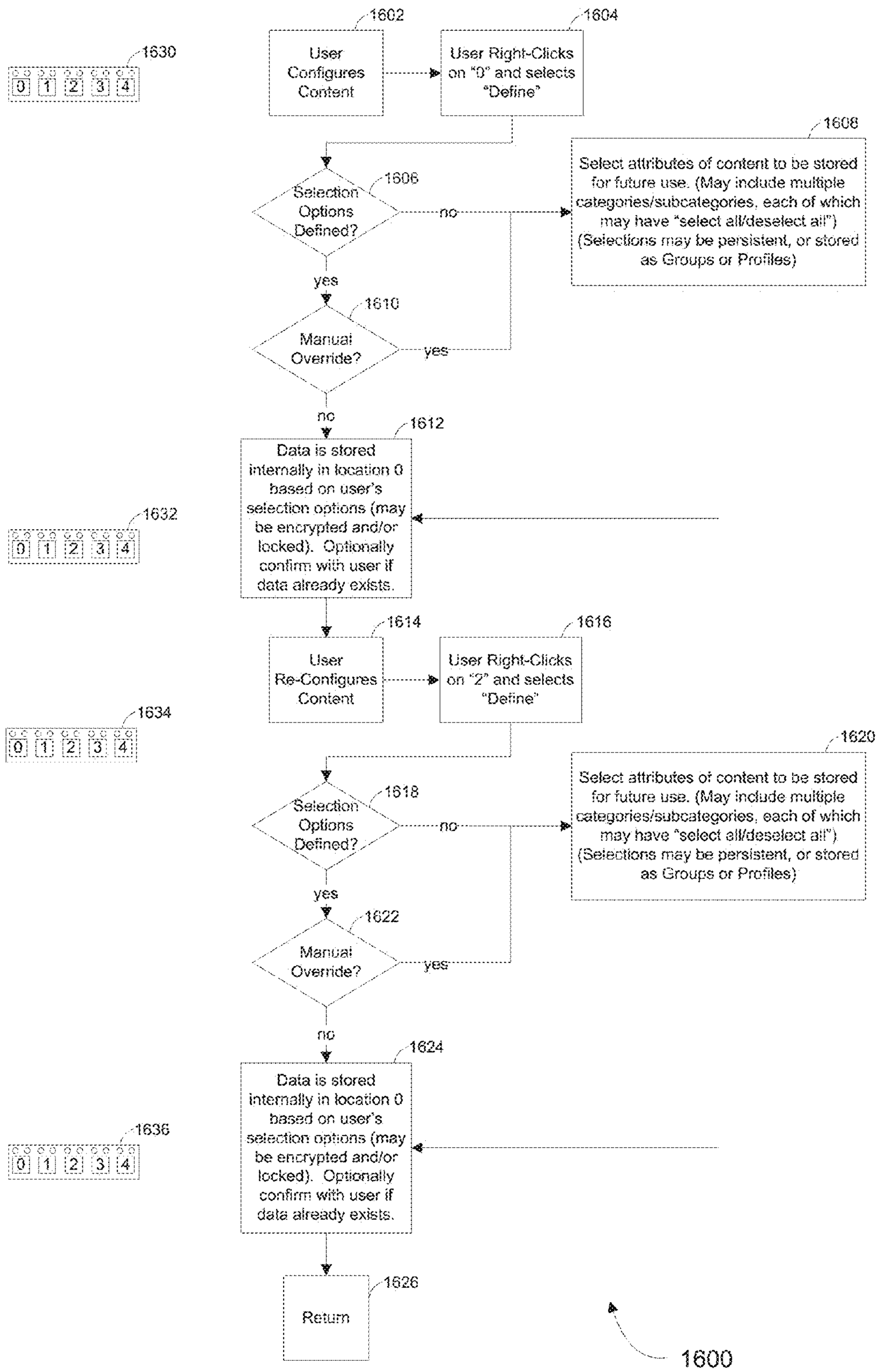
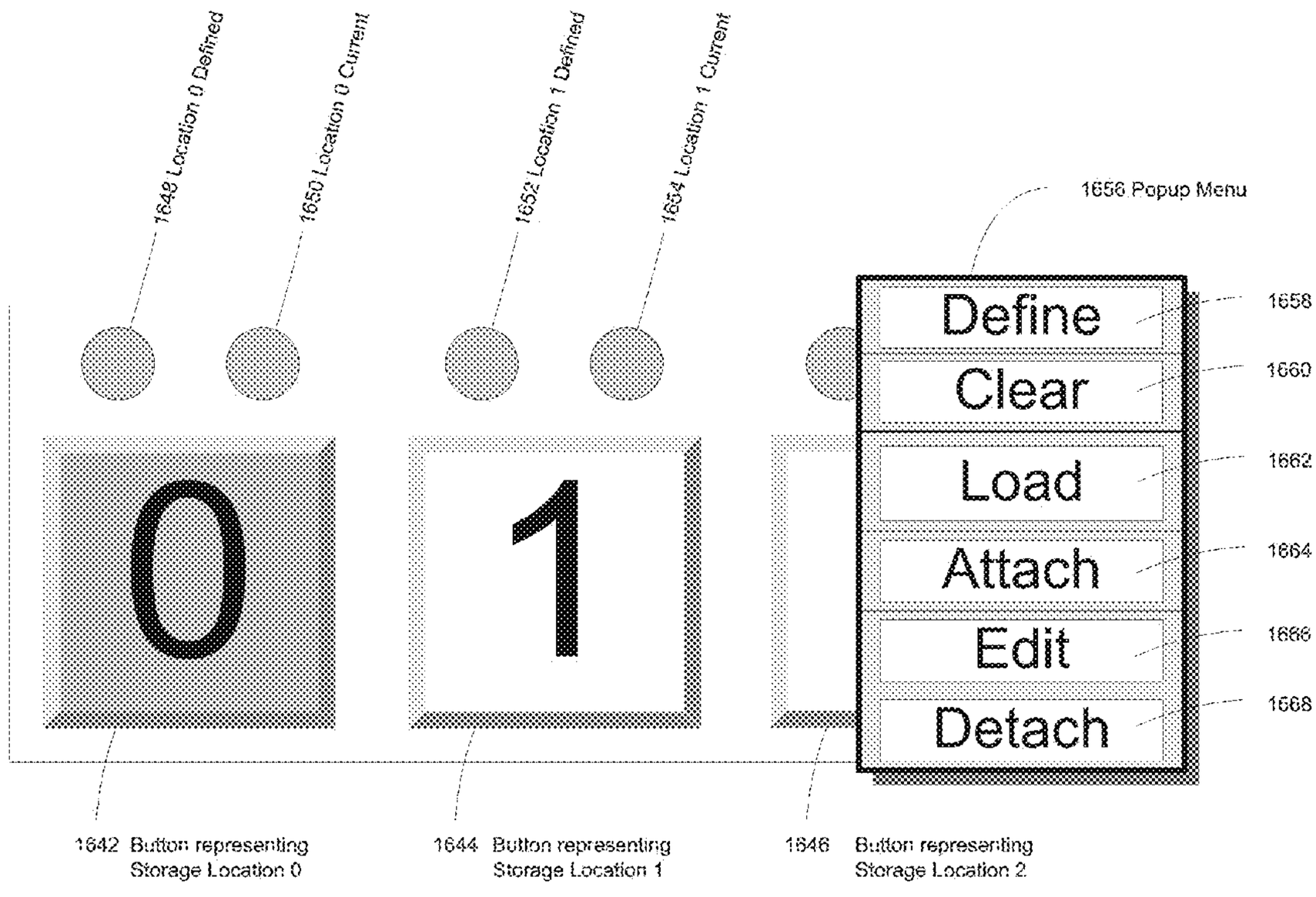

1630
0 1 2 3 4
1632
0 1 2 3 4
1634
0 1 2 3 4
1636
0 1 2 3 4
1602
User Configures Content
1604
User Right-Clicks on "0" and selects "Define"
1606
Selection Options Defined?
no
yes
1608
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
1610
Manual Override?
yes
no
1612
Data is stored internally in location 0 based on user's selection options (may be encrypted and/or locked). Optionally confirm with user if data already exists.
1614
User Re-Configures Content
1616
User Right-Clicks on "2" and selects "Define"
1618
Selection Options Defined?
no
yes
1620
Select attributes of content to be stored for future use. (May include multiple categories/subcategories, each of which may have "select all/deselect all") (Selections may be persistent, or stored as Groups or Profiles)
1622
Manual Override?
yes
no
1624
Data is stored internally in location 0 based on user's selection options (may be encrypted and/or locked). Optionally confirm with user if data already exists.
1626
Return
1600
Storing data using Intermediate UI

Fig. 16A



1640
Detailed view of Intermediate User interface

Fig. 16B

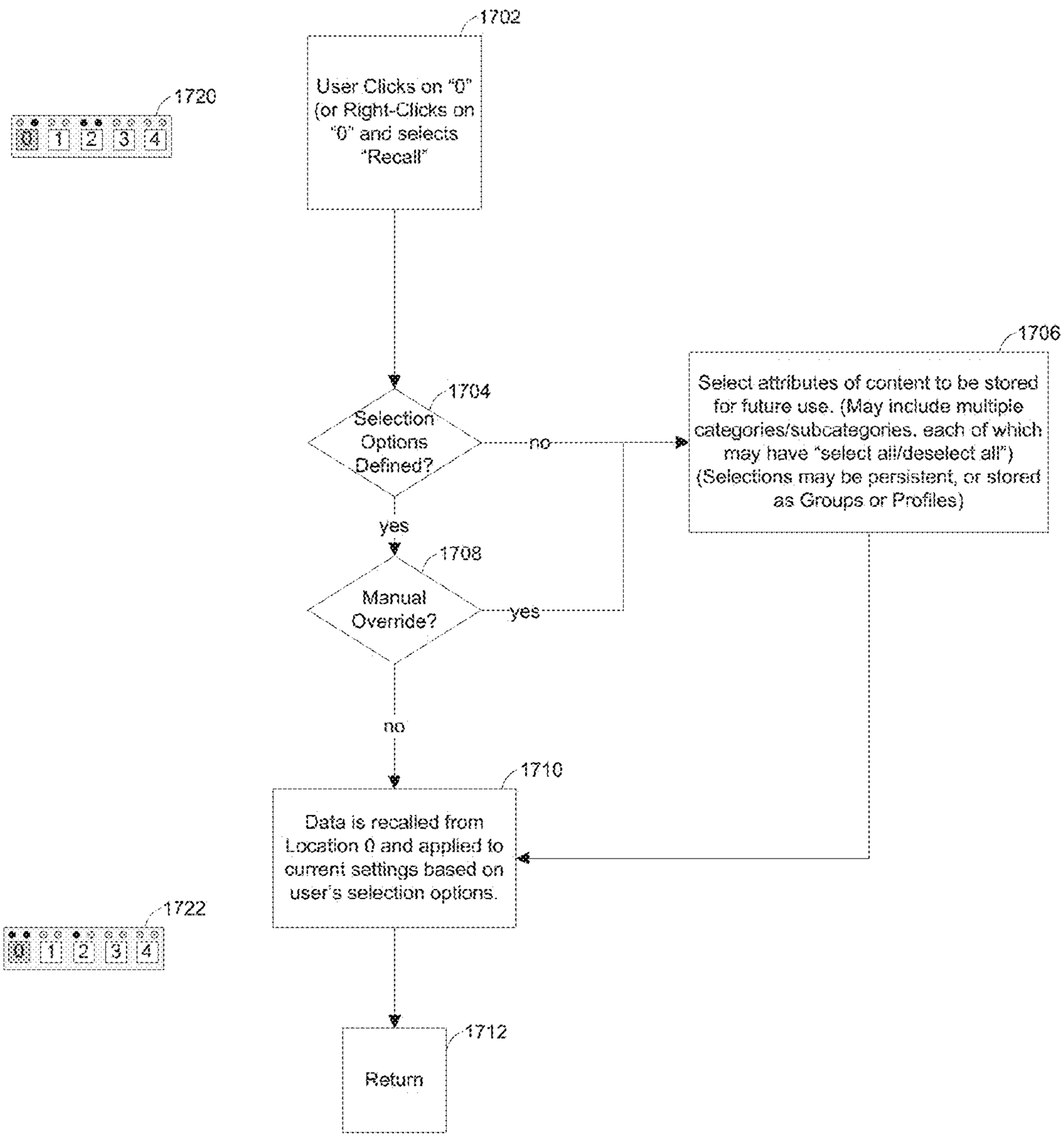


Fig. 17

1700
Recalling data in Intermediate UI

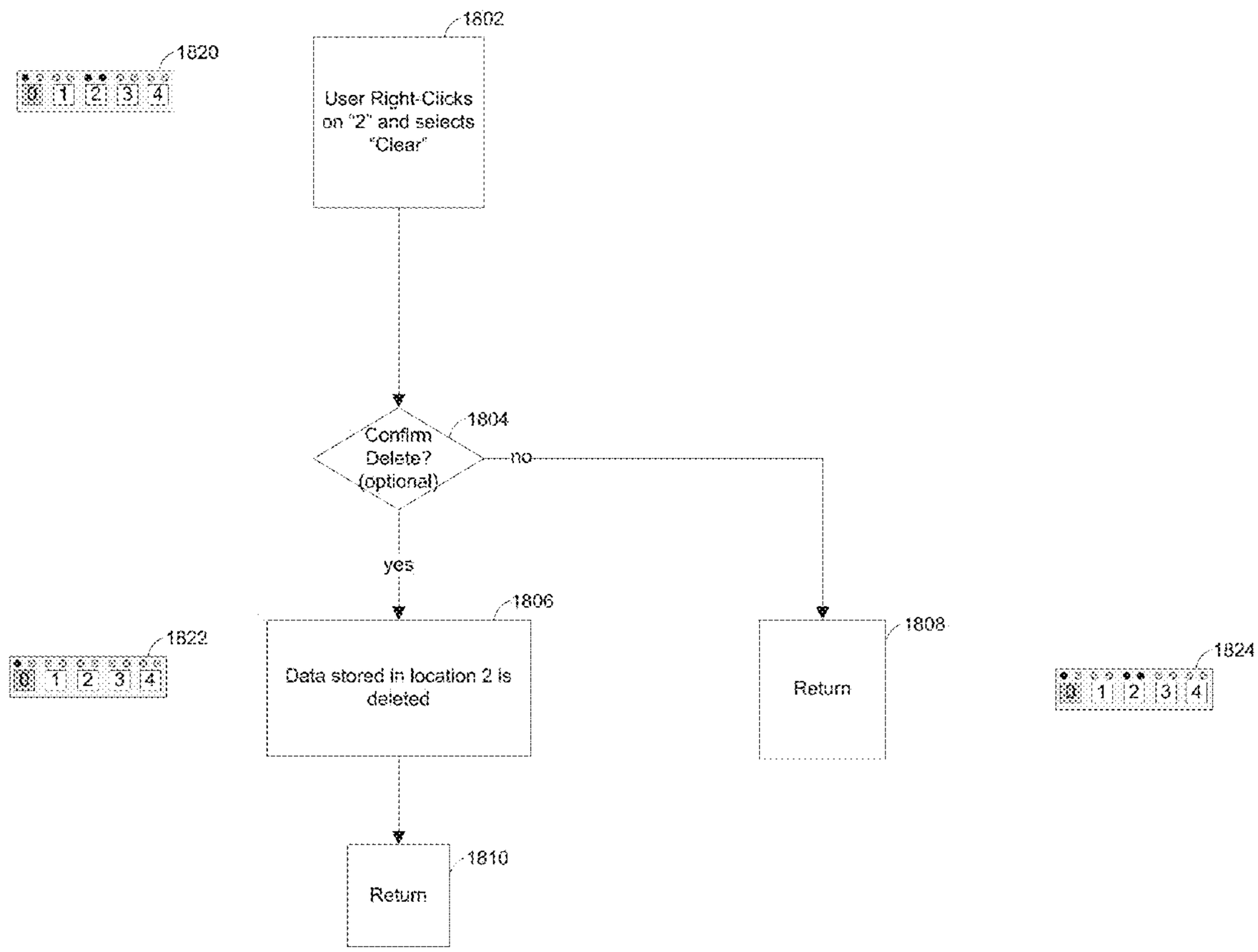


Fig. 18

1800
Clearing Storage Location in Intermediate UI

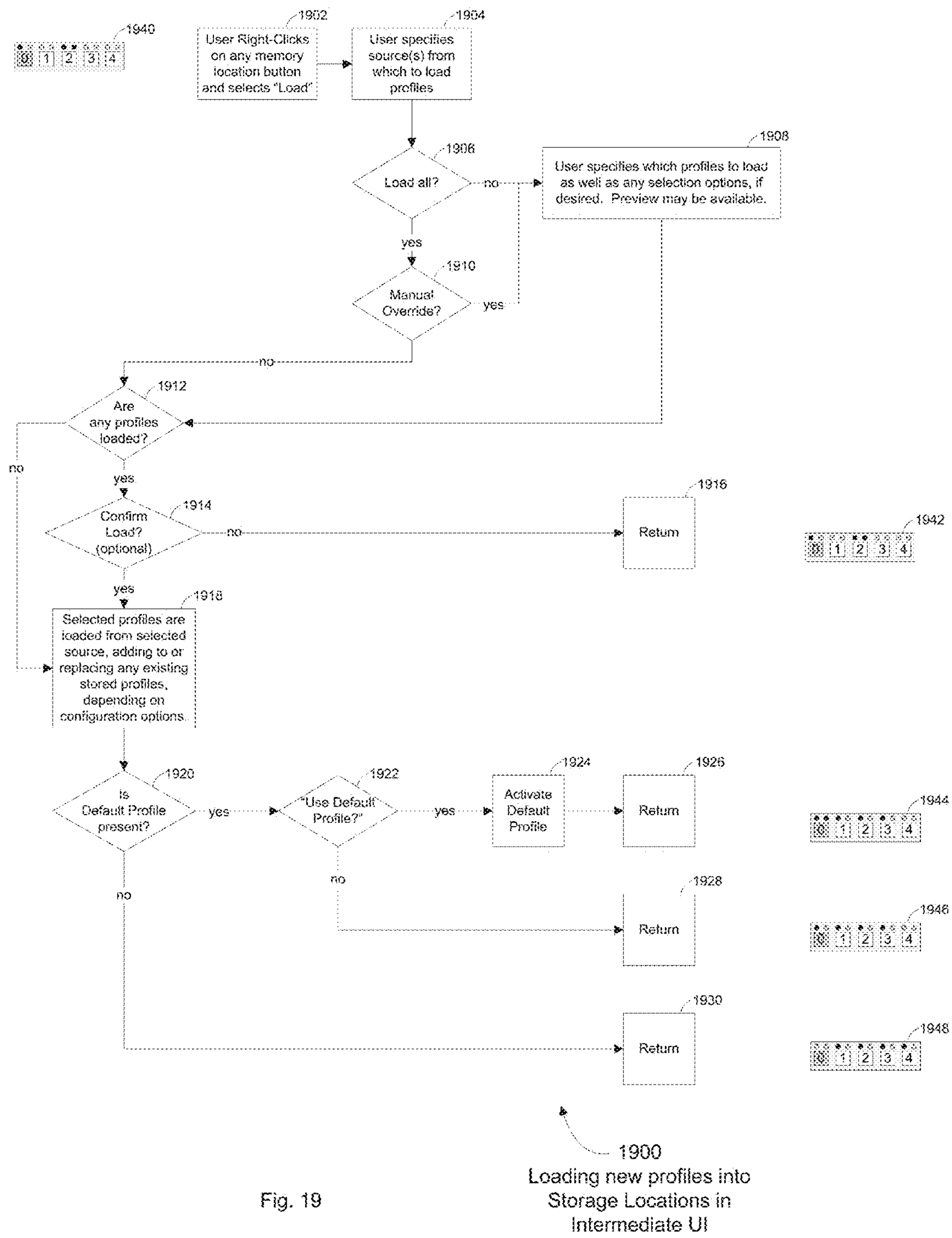

1940
1902
User Right-Clicks on any memory location button and selects "Load"
1904
User specifies source(s) from which to load profiles
1906
Load all?
no
1908
User specifies which profiles to load as well as any selection options, if desired. Preview may be available.
yes
1910
Manual Override?
yes
no
1912
Are any profiles loaded?
no
yes
1914
Confirm Load? (optional)
no
1916
Return
1942
yes
1918
Selected profiles are loaded from selected source, adding to or replacing any existing stored profiles, depending on configuration options.
1920
Is Default Profile present?
yes
1922
"Use Default Profile?"
yes
1924
Activate Default Profile
1926
Return
1944
no
no
1928
Return
1946
1930
Return
1948
1900
Loading new profiles into Storage Locations in Intermediate UI

Fig. 19

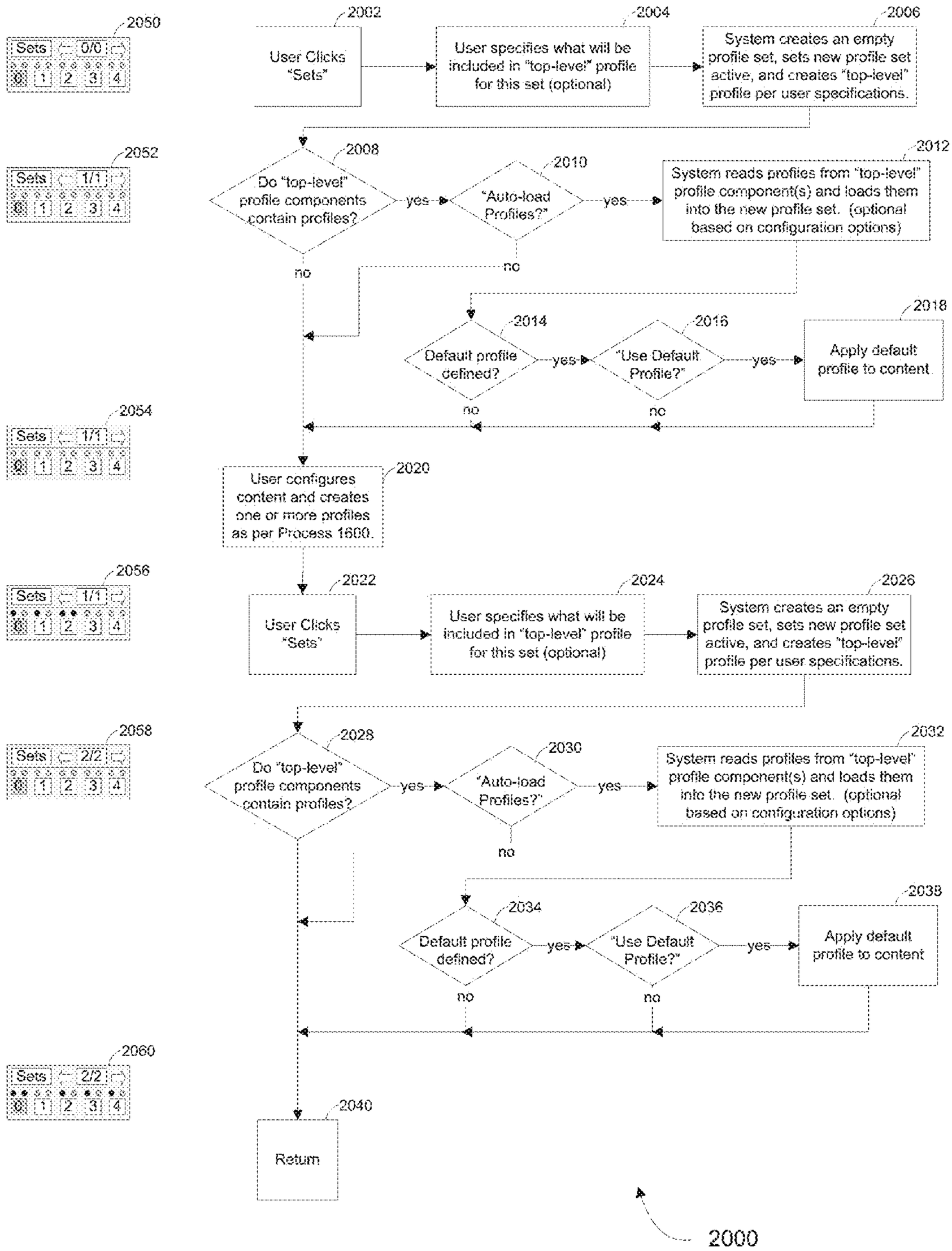


Fig. 20A

Creating new sets of profile data and storing data using Enhanced Intermediate UI

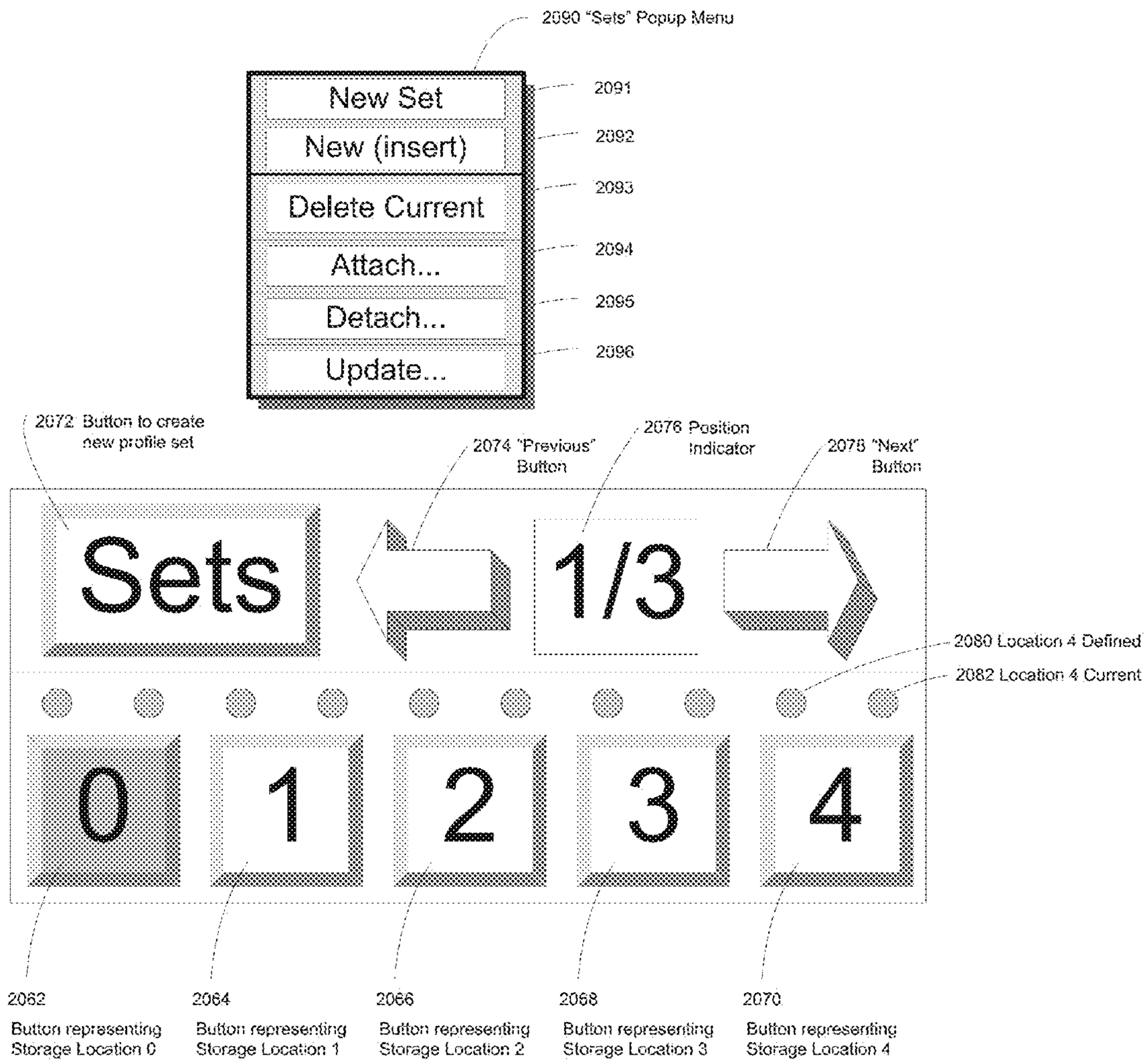


Fig. 20B

Detailed view of Enhanced Intermediate User interface

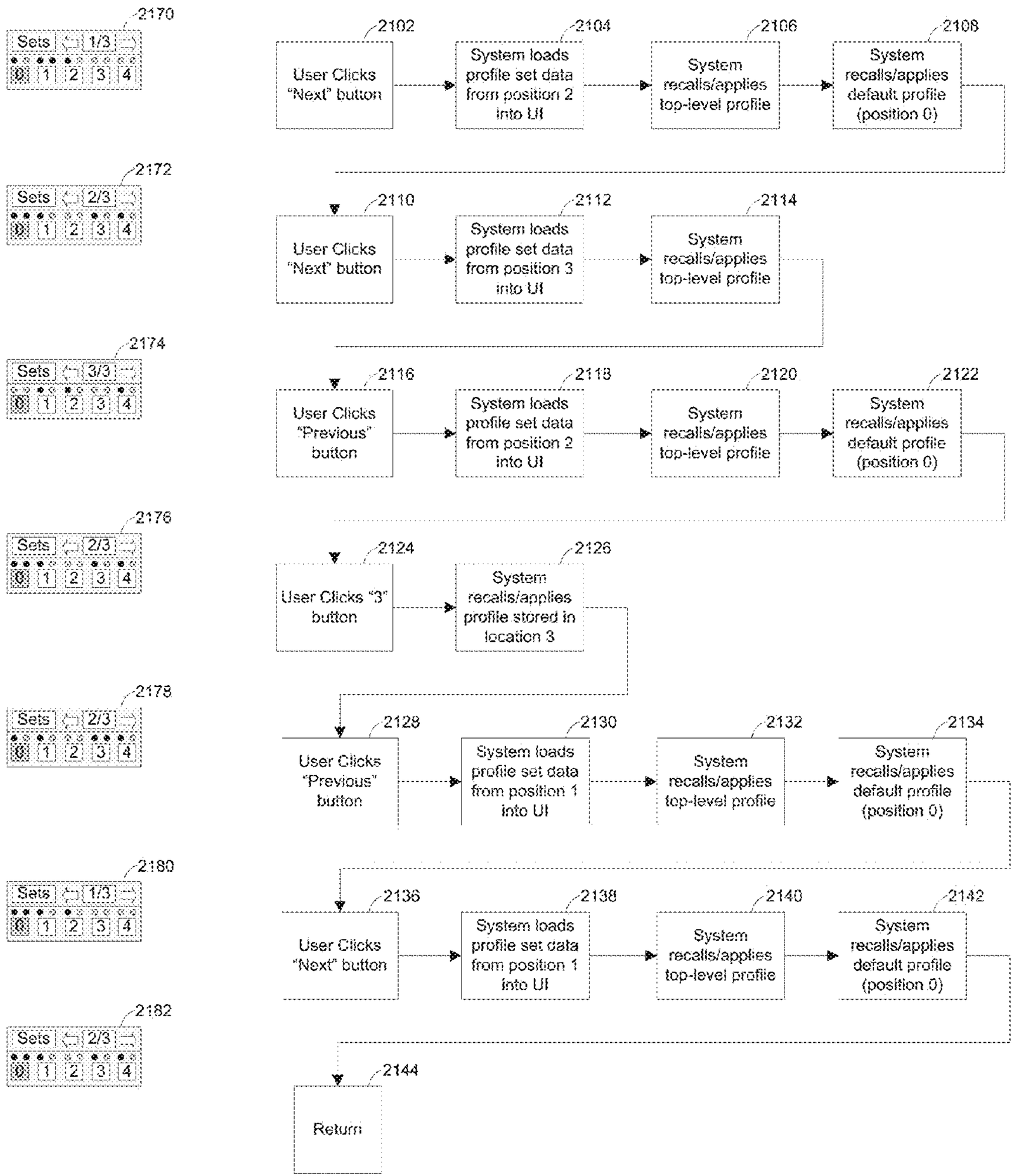


Fig. 21

2100
Recalling/applying sets of profile data using Enhanced Intermediate UI

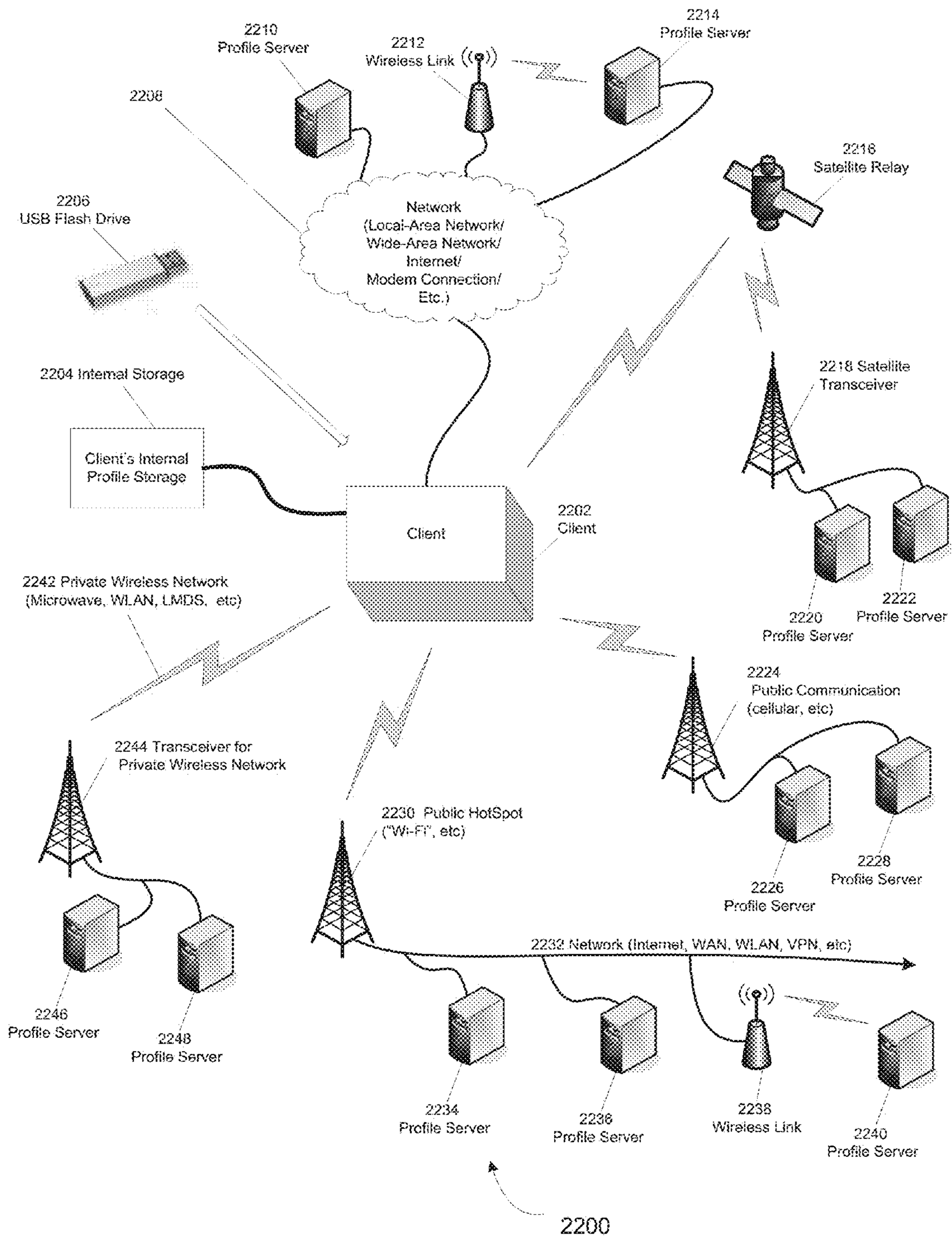


Fig. 22 Systems for connecting to profile servers

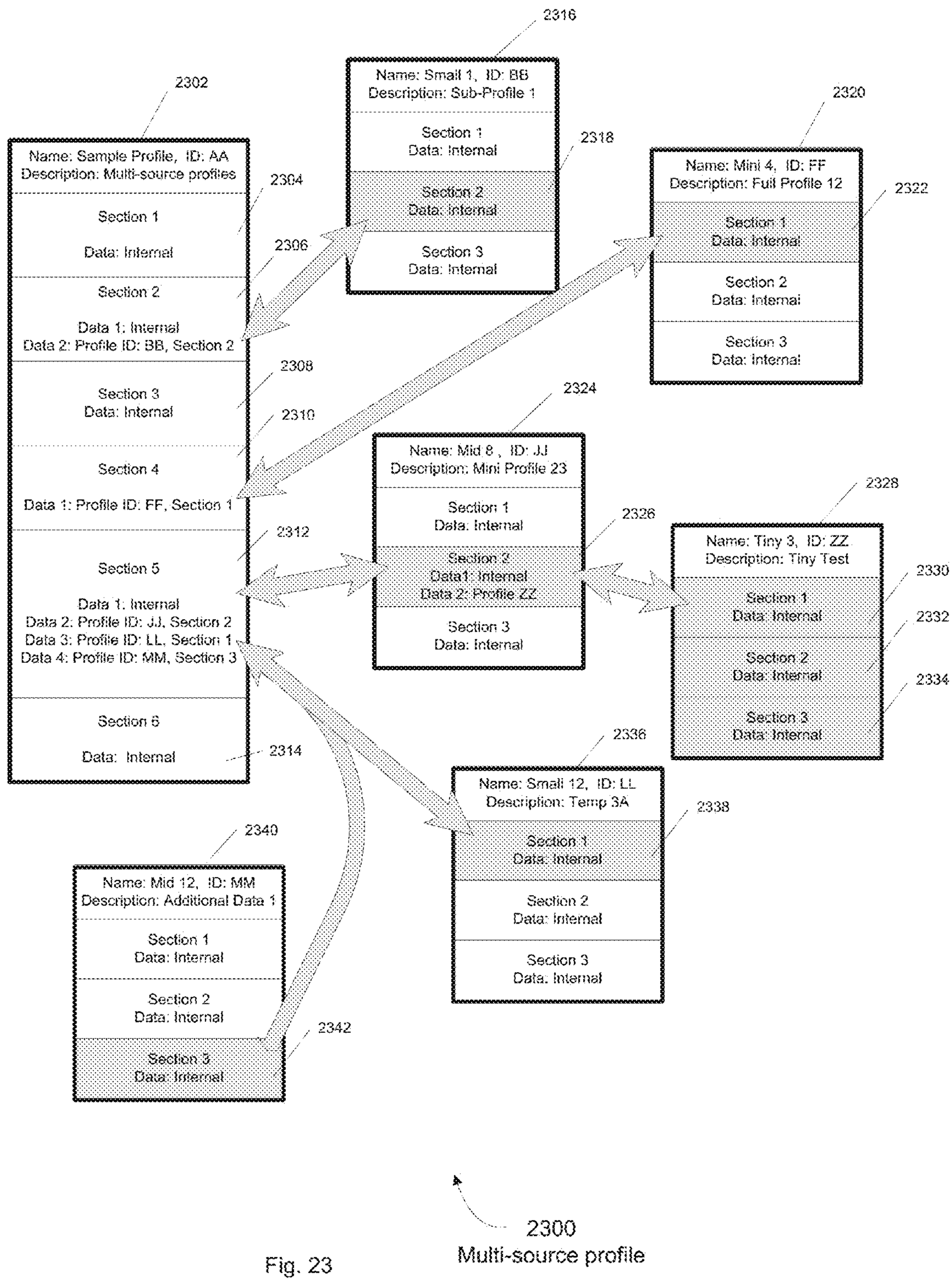

2302
Name: Sample Profile, ID: AA
Description: Multi-source profiles
2304
Section 1
Data: Internal
2306
Section 2
Data 1: Internal
Data 2: Profile ID: BB, Section 2
2308
Section 3
Data: Internal
2310
Section 4
Data 1: Profile ID: FF, Section 1
2312
Section 5
Data 1: Internal
Data 2: Profile ID: JJ, Section 2
Data 3: Profile ID: LL, Section 1
Data 4: Profile ID: MM, Section 3
Section 6
Data: Internal
2314
2316
Name: Small 1, ID: BB
Description: Sub-Profile 1
Section 1
Data: Internal
2318
Section 2
Data: Internal
Section 3
Data: Internal
2320
Name: Mini 4, ID: FF
Description: Full Profile 12
2322
Section 1
Data: Internal
Section 2
Data: Internal
Section 3
Data: Internal
2324
Name: Mid 8 , ID: JJ
Description: Mini Profile 23
Section 1
Data: Internal
2326
Section 2
Data1: Internal
Data 2: Profile ZZ
Section 3
Data: Internal
2328
Name: Tiny 3, ID: ZZ
Description: Tiny Test
2330
Section 1
Data: Internal
2332
Section 2
Data: Internal
2334
Section 3
Data: Internal
2336
Name: Small 12, ID: LL
Description: Temp 3A
2338
Section 1
Data: Internal
Section 2
Data: Internal
Section 3
Data: Internal
2340
Name: Mid 12, ID: MM
Description: Additional Data 1
Section 1
Data: Internal
Section 2
Data: Internal
2342
Section 3
Data: Internal
2300
Multi-source profile

Fig. 23

META-CONFIGURATION OF PROFILES

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 13/942,542, filed on Jul. 15, 2013, entitled "Meta-Configuration of Profiles," which is a divisional of U.S. patent application Ser. No. 12/972,876, filed Dec. 20, 2010, entitled "Meta-Configuration of Profiles," which is a continuation of U.S. application Ser. No. 11/753,476, filed May 24, 2007, entitled "Meta-Configuration of Profiles," which in turn claims priority to and benefit from U.S. provisional Application Ser. No. 60/803,306, filed May 26, 2006, entitled "Meta-Configuration of Profiles," and U.S. provisional Application Ser. No. 60/820,870, filed Jul. 31, 2006, entitled "Meta-Configuration of Profiles." The entire disclosures of each of the above-mentioned applications are herein specifically incorporated by reference in their entirety.

BACKGROUND OF THE INVENTION

The use of profiles is a convenient way to save time in performing various types of tasks. Default profiles provide desired preferences in advance for many different types of activities. For example, Microsoft Word may store a default profile such that when a new document is opened, the document uses 12 point type of a particular font such as Times Roman. As another example, profile buttons may be provided in an automobile that set the height, position and attitude of a car seat for several different drivers. Further, the default display in a computer aided design drawing application illustrates the devices being displayed in accordance with a default view. Each of these examples, as well as many other examples, constitutes profiles that can conform to a user's preferences or a default profile.

SUMMARY OF THE INVENTION

The present invention may therefore comprise a method of retrieving a profile that has a plurality of attributes and applying the profile to selected content comprising: defining the selected content to which the profile is to be applied; determining if the content includes an instruction to use the profile; retrieving the profile from a profile repository that is separate from and not embedded with the content; accessing the profile repository to load the profile; loading the profile from the profile repository; setting a current attribute pointer to a current attribute in the profile; applying the current attribute to the content; incrementing the current attribute pointer so that all attributes of the plurality of attributes in the profile are applied to the selected content.

The present invention may further comprise a method of applying a profile that has a plurality of attributes to selected content comprising: defining the selected content to which the profile is to be applied; setting a current attribute pointer to a current attribute of the plurality of attributes; applying the current attribute to the selected content when the current attribute has a corresponding attribute present in the selected content, and when the current attribute is valid for the content; incrementing the current attribute pointer so that the plurality of attributes in the profile are applied to the selected content whenever the attributes have a corresponding attribute present in the selected content, and when each attribute is valid for the selected content.

The present invention may further comprise a method of creating a profile for a Computer-Aided Design (CAD) application comprising: configuring attributes of the profile of the CAD application by applying the attributes to selected content of a CAD model for use with the CAD application; accessing a plurality of categories and subcategories of the attributes; selecting the attributes from the categories and subcategories to form the profile; applying a unique identifier to the profile; storing the profile in a profile repository embedded within the content of the CAD model.

The present invention may further comprise a method of using a profile controller to control the attributes of a profile to be used with selected content and other content comprising: accessing a plurality of categories and subcategories of the attributes; selecting the attributes from the categories and subcategories to form the profile; assigning a unique identifier to the profile; storing the profile in a profile repository for use with the selected content; retrieving the profile from the profile repository using the unique identifier; applying the profile to the selected content; sending a notification that the profile is available for use by the other content; allowing access to the profile by the other content.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1**A is a flow diagram illustrating a process for creating a new profile.

FIG. **1**B is a diagram illustrating the linking of profile types with profiles.

FIG. **1**C is a diagram illustrating an embodiment of a process that might be followed by a profile controller.

FIG. **2** is a flow diagram illustrating a process for recalling the profile by selecting the content.

FIG. **3** is a flow diagram illustrating a process for recalling the profile by selecting the profile.

FIG. **4** is a flow diagram illustrating a process for creating a new profile for multiple views in a single document.

FIG. **5** is a flow diagram illustrating a process for creating a new profile for multiple documents in a single application.

FIG. **6** is a flow diagram illustrating a process for creating a new profile for multiple documents in multiple applications.

FIG. **7** is a flow diagram illustrating an embodiment of a process for creating a new profile for video media.

FIG. **8** is a flow diagram illustrating an embodiment of a process for recalling a video playback profile by selecting a video file.

FIG. **9** is a flow diagram illustrating an embodiment of a process for recalling a video playback profile by selecting a profile.

FIG. **10** is a flow diagram of an embodiment of a process for creating a new profile for an automobile.

FIG. **11** is a flow diagram of an embodiment of a process for creating a new profile for 3-D CAD objects.

FIG. **12** is a flow diagram of an embodiment of a process for calling a profile by selecting CAD content.

FIG. **13** is a flow diagram of an embodiment of a process for recalling a profile by selecting the profile.

FIG. **14** is a flow diagram of an embodiment of a process for applying a profile from another source.

FIG. **15** is a flow diagram of an embodiment for creating a new profile from an operating system desktop configuration.

FIG. **16**A is a flow diagram of an embodiment for defining and storing profiles using an intermediate user interface.

FIG. **16**B is a detailed view of an intermediate user interface.

FIG. **17** is a flow diagram of an embodiment for recalling profiles using an intermediate user interface.

FIG. **18** is a flow diagram of an embodiment for clearing profiles using an intermediate user interface.

FIG. **19** is a flow diagram of an embodiment for loading profiles into an intermediate user interface.

FIG. **20**A is a flow diagram of an embodiment for working with multiple sets of profiles using an enhanced intermediate user interface.

FIG. **20**B is a detailed view of an enhanced intermediate user interface.

FIG. **21** is a flow diagram of an embodiment for recalling and applying multiple sets of data using an enhanced intermediate user interface.

FIG. **22** is a schematic diagram of a system for connecting to profile servers.

FIG. **23** is a schematic diagram of a multi-source profile.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

FIG. **1**A is a flow diagram of an embodiment of an overall process for creating a profile. At step **102**, the content to which the profile will be applied is created or obtained from another source. For example, the user may wish to create a profile for a document such as a Word document. In that case, the user may create the Word document or retrieve a Word document from a source. Alternatively, it may be desirable to create a profile for a set of CAD drawings. The content of the CAD drawings may be created by the user or obtained from another source. At step **104**, the user chooses or configures the desired attributes of the content. The attributes are the settings for items such as format, style, position, etc. for which settings are chosen by the user for the particular content. For example, in a Word document, the attributes may be the settings for font, font size, spacing, etc. In a CAD drawing, attributes may be the settings for the views, lighting, size, etc.

After step **104** is completed, the process can proceed either to step **106** or to step **110**. If the process proceeds to step **106**, the content is selected from which a profile is created. In other words, the user can select the content that is going to be used to create a profile. In the example of a Word document, the user may select one or more paragraphs of the document, or in a CAD drawing one or more objects of the CAD drawing. Also, the user may have the option "select all." The process then proceeds to step **108** where the user requests the controller to define a profile. In other words, the controller or processor of the system initiates the process for defining a profile at step **108**.

Alternatively, after step **104**, the process can proceed to step **110** where the user first requests the controller to define a profile. The process then proceeds to step **112** where the content is selected from which a profile is to be created. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **112** by not selecting any content. After step **108**, or step **112**, the process can optionally proceed to step **114** where the user selects a name for the profile and optionally provides a description of that profile. For example, if a user desires to select a profile for an automobile, such as seat settings, audio settings, engine performance settings, climate control settings, etc., the user may wish to use his or her name as the profile name. The process of selecting a name in accordance with step **114** can be performed at this point, or optionally can be performed at step **124**, as disclosed below. In other words, the process can proceed directly to step **116** and selection of the name can occur at step **124**.

The process then proceeds to step **116** where the user selects attributes of the content to be stored for future use. The attributes are the settings of the items that form the profile. For example, in a profile for an automobile, the attributes may include seat position, lumbar position, back rest tilt, seat height, audio volume, audio presets, climate control temperature, engine performance parameters, etc. For a Word document, the attributes may include the font, font size, line spacing, paragraph spacing, centering features, paragraph layout, etc. For a CAD drawing, the attributes may include the view, lighting, transparency, part color, wire frame, etc. For a computer desktop, the attributes may include open applications and their window sizes and associated open documents (including position within the document), power settings, screen resolutions, audio volume, etc.

One implementation of the process of selecting attributes in accordance with step **116** may be to display a series of categories and subcategories as menu check boxes which allow the user to check or uncheck each one of the attributes that is going to be saved as part of the profile. For example, in an automobile, the user may check an "audio" box category, which brings up subcategories as additional check boxes such as "Preset Buttons" and "Volume". The user can select "Preset Buttons," and additional check boxes may be displayed for the individual radio preset buttons, which allow selection of a particular frequency (radio station) for each of the preset buttons. Of course, a "select all" or "deselect all" option can be provided with the check list. In addition, the user may generate groups which can be a collection of attributes which may or may not be related. For example, a group may include the presets for buttons **1**, **2** and **3** for the radio. Another group may include the presets for buttons **4**, **5** and **6** of the radio. A third group may include all of the radio presets plus the climate control settings. The groups can be used to populate a profile in a simple and easy manner by importing the settings for the groups into a new profile. This aids the user in reducing the time required to populate a new profile. These groups and the profiles within the groups can be defined by the user and/or specified by the system (i.e. company-wide definitions, etc.) to greatly simplify configuration. For example, in the case of a Word document, if the user wants to define a set of profiles containing specific text formatting attributes such as font, size, line spacing, character adjustment setting, etc., the user may define a group containing the desired items and whether each item should be included or excluded, as well as (optionally) the settings of the items (attributes), (effectively creating a profile that can be used to define other profiles). Further, a profile can contain links to one or more additional profiles, along with information regarding which portion or portions of this linked profile data should be included and/or ignored, to provide further flexibility. For example, as illustrated in FIG. **1**B, profile (P**3**) **154** may have its own data, and also has links to profiles (P**4**) **160** and (P**5**) **161**. This allows profile (P**3**) **154** to have a simpler definition, as profile (P**3**) **154** will automatically include either the full profile information or a subset thereof (per user preference and configuration information) from profiles (P**4**) **160** and (P**5**) **161**. Then, when defining the new profile or recalling an existing profile, rather than having to manually specify which attributes to include and/or exclude, the user can simply specify the group created above, and all settings will be automatically adjusted as specified in the group. If the user has chosen to link the current profile to one or more

additional profiles, the current settings will be adjusted as if the profile information from the additional profile(s) were directly included in the current profile. The user, when specifying the group or profile, can optionally select, for example, "turn all in group ON" or "turn all in group OFF" (as well as other options) instead of simply applying the settings stored in the group, thereby further increasing the flexibility of the selection operation. These groups can be used in both storage and recall of profiles. Just as a profile definition may be simplified using groups, a profile definition may be very simple by allowing it to contain data from other profiles, as copies of the data and/or as links to the data to further simplify its definition. In fact, a profile definition may consist entirely of links to other profiles, the information of which will be processed as appropriate.

The process of FIG. **1**A then optionally proceeds to step **118**. At step **118**, profile types are defined or specified by the user. For example, as illustrated in FIG. **1**B, the user or multiple users may have multiple profiles defined in the system such as a first profile (P**1**) **152**, second profile (P**2**) **153** and a third profile (P**3**) **154**. The user may then wish to link a first type (T**1**) **156**, which may be an audio profile type with profiles (P**1**) **152** and (P**2**) **153**, since both profiles (P**1**) **152** and (P**2**) **153** include audio categories. However, the user can associate or link the first profile type (T**1**) **157** with any particular profile, even though that profile may not include audio attributes. It is strictly up to the user how the profile types will be linked to the particular profiles. For example, the user may link the comfort-related profile type (T**2**) **158** to climate control, seat position and audio profiles. Profile type (T**3**) **159**, that relates to engine performance, is linked to profile (P**1**) **152** and profile (P**3**) **154** that both include performance attributes. Each profile may have multiple types. For example, a single profile could belong to both the "comfort" type and the "performance" type. The advantage of providing profile types is that the user may sort and/or filter the list of available profiles by type, thereby simplifying the selection process (such as showing only profiles that are flagged as "comfort" profiles). For example, if the user chooses to show only a particular profile type, such as the second profile type (T**2**) **158**, which is a comfort profile type, the user will see only the profiles that are associated with that particular profile type so that during recall, as disclosed in FIG. **2**, the user can more easily choose the desired profile to recall. The names of each of the profile types can be selected by the user and/or predefined names can be provided for the profile types. Groups (G**1**) **155** and (G**2**) **156** are also illustrated in FIG. **1**B. As explained above, groups can include any desired collection of attributes and can be used to quickly and easily populate profiles.

Referring again to FIG. **1**A, the process then proceeds to step **120** where the process of saving the profile that is defined by the chosen attributes is initiated. At step **122**, it is determined by the controller whether a name for the profile, and optionally a description of the profile, have been selected at step **114**. If not, the user selects the profile name and optionally a description of the profile at step **124**.

The process of FIG. **1**A then proceeds to step **126** for selection of the storage type or types for the profile. As disclosed in step **126**, profiles can be stored internally in one or more files that the user is accessing, externally in a separate file, and/or externally in a database. For example, if the user generates profiles for a Word document, the profiles can be stored internally in the file of the Word document. Further, the user can store the profiles in another file that may be associated with the Word document. Still further, the user can store the profiles in an external database. External databases can include any desired type of volatile or non-volatile memory including RAM, USB plug-ins, flash media, memory cards, hard drives, removable hard drives, network storage (NAS, SAN, etc.), zip drives, an actual database or data management application, etc., that can be accessed either locally or over a wired or wireless network including LANs, WANs, the internet, etc. An identifier can be assigned to the profile so that when a particular file is opened, the file can identify and access the profile data that is stored in another file or in an external database. In the example of an automobile profile, the profiles may be stored in a plug-in USB drive. The user can simply plug the USB drive into a USB port in the automobile to provide the automobile with the user's profiles. Alternatively and/or additionally, a touch screen and/or any other interface or combination of interfaces, including keyboard, mouse/touchpad, audio, voice, SMS, text message, email, etc., may be provided in the automobile that allows the user to select his or her name that includes the stored profiles in a file associated with the user's name. These profiles can be stored on the hard drive or other non-volatile memory in the automobile computer for access by a number of different users. Profiles that are stored in external databases can also be accessed over a wired or wireless communication link or network such as a local area network, a wide area network or the Internet. For example, a user may prefer a certain font, line spacing, paragraph spacing, margins, centering and other layout parameters for a particular Word document. If the user creating the Word document, for example, desires to apply the same profiles, the user can access the profiles from another file over a network, download those profiles, and apply those profiles to the new Word document. Of course, the same principles apply to other uses of the disclosed system such as CAD drawings and other applications of the system. For example, profiles for a particular driver may be wirelessly downloaded in an automobile from an external database that is connected to a network.

Further, storage and usage of the profiles can be either static or dynamic. For static profiles, the user must manually update the profile if changes are made, and must also manually update any documents, etc. that use the profile information. For example, if a user is working on a document and has stored a profile in an external database with a static link, and the user modifies the controlling or defining aspects of the profile, the user must manually update the stored profile. Further, if another user modifies this stored profile, the initial user's document will only be reformatted or changed in accordance with the updated profile information if the initial user reloads the profile data. In contrast, dynamic storage may automatically update or change the stored profile(s) (with or without prompting the user, depending on configuration options) if a change is made to the controlling or defining aspects of the profile. Additionally, if a stored profile is modified, the dynamically linked profile may automatically update linked documents, etc. that use the profile information, or may prompt the user as to whether the user would like to apply the new profile information to the current document, etc. For example, if a user is working on a document and has stored a profile in an external database with a dynamic link, and another user modifies this profile, the initial user's document may be automatically updated with the new formatting, etc. included in the updated profile, or the user may be prompted as to whether the user would like to apply the new profile information to the current document. When the user is prompted whether to apply the new profile information, the system

may provide a "preview" of the changes to enable the user to see what will occur before the changes are actually applied. Also, when a dynamic link is in use, the option regarding whether the user will be prompted to apply the new profile, as well as other preferences, including the option to ignore all changes to linked profiles, can be set as a user-level preference, as a system-level preference, and/or as one or more other levels of preference, depending on the behavior and level of flexibility desired.

FIG. **1**C illustrates an embodiment of a process **170** that could be used by a profile controller to handle dynamic links, as described above. In step **171**, the profile controller receives a request from a client to store a profile. The process then proceeds to step **172**, in which the profile controller negotiates with the client to determine what profile needs to be stored and receives the current profile data from the client. This negotiation may include assigning a unique ID, if needed, to the profile, as well as other data manipulations and assignments. The process then proceeds to step **173**. At step **173**, the profile controller determines whether the current profile has been previously stored, and if so, if its existing profile data is to be archived. One reason for archiving profile data is to enable the user to restore a previously used profile. If the current profile has not been previously stored, or if the existing profile data is not to be archived, the process proceeds directly to step **175**. If the existing profile data is to be archived, the process proceeds to step **174**, where the profile controller archives the existing data for the current profile. This archival process can take many forms, including differential backup, compression, encryption and/or any other method for storing data. The process then proceeds to step **175**. At step **175**, the profile controller stores the current profile data as specified and provided by the client. Any method of storage may be used, and may include encryption, compression, etc., and the data may be stored in any appropriate location. The process then proceeds to step **176**. In step **176**, the profile controller sends a message indicating that an updated profile is available. This message may be sent for new profiles as well. This message may be a system-wide broadcast message or may be targeted to specific clients, and may be sent to local and/or remote destinations (such as over a network or the Internet). In the case of a broadcast message, the receiver can be configured to receive such messages, such as by "subscribing" to them. The receivers of these messages may be clients such as the one that initiated the request to store the profile, and may also include other profile controllers, which may be located remotely, thus enabling a distributed, redundant system of profile controllers. The "profile updated" message may include the profile's unique ID and current revision, as well as other information (including the complete profile, if desired). The receiver of the message will then determine the appropriate action, if any, to be taken. The process of FIG. **1**C then proceeds to step **177** and ends.

The process of FIG. **1**A then proceeds to step **128**. At step **128**, the user is prompted to cancel the storage of the profile or accept the profile for storage. If it is determined at step **128** to cancel the storage of a profile (for example, if the user desires to start over), the process proceeds directly to step **150**. If not, the process proceeds to step **132**. At step **132**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **130**. If the profile is to be set as the default profile, the process proceeds to step **134** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **130**, where the system determines, based upon the instructions provided at step **126**, whether to store the profile internally to a particular file. The process then proceeds to step **136**. At step **136**, the documents or objects to which the profile will be stored are selected. With respect to specific objects, such as objects in a CAD drawing, one or more profiles can be associated with various objects in the data files, just as one or more profiles may be stored within each document or object. If the profile already exists within the documents or objects, the user may be prompted as to whether the existing profile should be updated, as well as to whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). At step **138**, the system stores the profile within the selected document(s) or object(s). If desired, the stored profile can be encrypted and/or locked (such as with a password) when stored to prevent unauthorized or unintentional changes and/or usage. This security may include one or more authentication methods and technologies such as biometric identification (retinal scan, fingerprint, voice authentication, etc.), SmartCards, USB keys, etc. The process then proceeds to step **140**. If it is determined at step **130** to not save the profile internally, the process proceeds directly to step **140**.

At step **140** of FIG. **1**A, the system determines if the profile is to be saved externally. If not, the process proceeds directly to step **150** and ends. If the profile is to be saved externally, the process proceeds to step **142** where a unique identifier (such as a serial number) is applied to the profile. If such an identifier has already been assigned to the profile, this step may be omitted. The process then proceeds to step **144** to determine if a dynamic link is to be established with the external profile. If so, the process proceeds to step **146** to internally flag the link as a dynamic link so as to optionally dynamically update the profile definition as changes are made. Flagging the link as dynamic also allows the existing (i.e. used for profile definition) content to be updated (either completely automatically or by optionally prompting the user) if the stored profile is updated. The optional features may be specified as user-level, system-level, and/or one or more other levels of preferences, depending upon the behavior and level of flexibility desired. Dynamic links and groups are more fully explained above. The process then proceeds to step **148**. If it is determined that a dynamic link is not desired, the process proceeds directly to step **148**.

At step **148** of FIG. **1**A, the profile is saved to an external location such as an external database, an external file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated for the profiles as the profiles are changed. The process then proceeds to step **150** to end the process.

FIG. **2** is an embodiment of a process **200** for recalling a profile by selecting the content. At step **202**, the user selects

the particular content such as a Word document, CAD file, etc. At step **204**, the system determines if the content or controlling environment (such as the application containing the content) is configured to "use profiles." If the content is not programmed to use a profile at step **204**, or if the user has chosen not to "use profiles," the process proceeds directly to step **238** to end the process. If the content is programmed with an instruction to "use profiles" and the controlling environment is configured to "use profiles," the process proceeds to step **206** to determine if the content contains profiles or links to profiles. If the content does not contain profiles or links to profiles, the process proceeds to step **208**. If the content does contain profiles or links to profiles, the process proceeds to step **216** to determine if an automatic profile selection is activated. If the automatic profile selection is not activated, the process proceeds directly to step **208**. If the automatic profile selection is activated, the process proceeds to step **218** to determine if a default profile has been defined. If a default profile has not been defined, the process proceeds to step **208**. If a default profile, which may be a linked profile, has been defined, the process proceeds to step **220** to activate a default profile. The process then proceeds to step **222**.

At step **208** of FIG. **2**, a profile is selected by the user. Possible sources of profiles are internally stored profiles or an external source of profiles, such as databases, files and other sources. For the example of a Word document, profiles can be extracted and used from any other source, including other Word documents. The process then proceeds to step **210** where the user can decide whether to apply all of the profile or only a portion of the profile. If the entire profile is to be applied, the process proceeds directly to step **214**. If only a portion of the profile or none of the profile is to be applied, the process proceeds to step **212**. At step **212**, the desired attributes of the profile are selected by the user. The attributes may be organized into multiple categories and subcategories. Categories are similar to groups as discussed above, but constitute a collection of related attributes. The multiple categories and subcategories allow the user to "select all" or "deselect all" for increased efficiency and flexibility when configuring a profile. The selections may be persistent, i.e., settings may be remembered between reboots/restarts, and may be stored and recalled as groups or profiles as described above.

The process of FIG. **2** then proceeds to step **214** where the system creates a temporary profile based on user selections and sets the profile active. The process may then optionally proceed, depending on configuration options, to step **250** where the user is prompted whether to create a link to the profile. If the user chooses not to create a link, the process then proceeds directly to step **222**. If the user chooses to create a link, the process then proceeds to step **252** where a link to the profile is created in the content. At step **254**, it is determined whether the profile should be set as the default profile. If it is determined as step **254** that the profile should be set as the default profile, the process proceeds to step **256** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **258**. If it is determined at step **254** that the profile is not to be saved as the default profile, the process proceeds directly to step **258**. At step **258** it is determined if a dynamic link is to be established with the profile. If so, the process proceeds to step **260** to internally flag the link as a dynamic link so as to optionally dynamically update the profile definition as changes are made. Flagging the link as dynamic also allows the content to be updated (either completely automatically or by optionally prompting the user) if the stored profile is updated. The process then proceeds to step **222**. If it is determined that a dynamic link is not desired, the process proceeds directly to step **222**. At step **222**, the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created or if the default profile is not present or is corrupted, the process proceeds directly to step **238** and the process ends. If an active profile has been defined, the process proceeds to step **224** to reset the current attribute pointer in the active profile. In other words, a pointer is set in the profile to point to the current attribute in the profile. The process then proceeds to step **226** to determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, such as recalling an automobile profile in an automobile different from the automobile in which the profile was defined, i.e., there may be different numbers of radio presets, no seat height adjustment, etc. The verification operation determines if the current attribute can be applied to the content, i.e., if the current attribute has a corresponding attribute in the content, and if so, if the attribute data is valid for the content, i.e., if the attribute data can be applied to the content. For the example of an automobile profile, a profile attribute for a radio station preset may be applicable if the automobile has configurable radio preset buttons, but may only be valid if the attribute's preset button number exists in the automobile. An additional example is the case of applying an automobile profile to a home theater system, in which the radio preset attributes in the profile may have corresponding attributes in the home theater system, but other profile attributes may not. If the current attribute is applicable and valid, the process proceeds to step **228** to apply the current attribute to the content. For the example of an automobile profile, seat positions, climate controls settings, engine performance settings, sun/moonroof settings, and audio settings can all be set, as well as other settings such as display brightness, mirror positions and other initializing options. The process then proceeds to step **230**. If it is determined at step **226** that the current attribute is not applicable and valid, such as an attribute for audio radio station preset button **6** when the current vehicle only has 5 radio station preset buttons, the process proceeds directly to step **230**. At step **230**, the current attribute pointer is incremented, meaning that the next attribute is accessed. The process then proceeds to step **232** to determine if all of the attributes have been accessed and applied to the content. If not, the process loops back to step **226**. If all of the attributes have been processed and either applied or skipped, the process proceeds to step **234** to determine if any startup attributes are present. If startup attributes are present, the process proceeds to step **236** to process the startup attributes which may include starting applications, etc. The process then ends at step **238**. If it is determined at step **234** that there are no startup attributes present, the process ends at step **238**.

FIG. **3** is an embodiment of a process **300** for recalling a profile by selecting the profile. At step **302**, the profile is selected. The process then proceeds to step **304** to determine if a content source has been defined. If the content source has been defined, the process proceeds to step **308**. If the content source has not been defined, the process proceeds to step **306**

to specify the content source such as a document or portion of a document, file, database, etc. At step **308**, content is loaded from the selected source, if necessary. The process then proceeds to step **310** to determine if the entire profile should be applied to the content. If so, the process proceeds directly to step **314**. If the entire profile is not to be applied to the content, the process proceeds to step **312** where the user selects attributes of the selected profile to be applied to the content. The user may use categories and subcategories each of which may have a "select all" and a "deselect all." The selections may be persistent and may be stored and recalled as groups or profiles. These groups and/or profiles can be defined by the user and/or specified by the system (i.e. company-wide definitions, etc.) to greatly simplify configuration options. For example, in the case of a Word document, if the user wants to define a set of profiles containing specific text formatting attributes such as font, size, line spacing, character adjustment setting, etc., the user may define a group containing the desired items and whether each item should be included or excluded, as well as (optionally) the setting of the item (attribute), effectively creating a profile that can be used to define other profiles. Then, when defining the new profile, rather than having to manually specify which attributes to include and/or exclude, the user can just specify the group created above, and all settings will be automatically adjusted as specified in the group. The user, when specifying the group, can optionally select, for example, "turn all in group ON" or "turn all in group OFF" instead of simply applying the settings stored in the group, thereby further increasing the flexibility of the selection operation. The process then proceeds to step **314** where the system creates a temporary profile using the selections of the user and sets the temporary profile active. The process then proceeds to step **316** where the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created, the process proceeds to step **332** and ends. If it is determined at step **316** that an active profile has been defined, the process proceeds to step **318** where the system resets the current attribute pointer in the active profile. The process then proceeds to step **320** to determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, such as recalling a computer desktop profile on a computer different from the computer on which the profile was defined, i.e. the desired screen resolution may not be available, the desired applications may not be available for use, etc. The verification operation determines if the current attribute can be applied to the content, and if so, if the attribute data is valid for the content. If the current attribute is not applicable and valid, such as an attribute to start an application that is not installed on the destination computer, the process proceeds to step **324**. If the current attribute is applicable and valid, the process proceeds to step **322** where the current attribute is applied to the content. For the example of a computer desktop, attributes can specify application and operating system options and settings, application window positions and sizes, power, screen and hardware settings, as well as other options and settings. The process then proceeds to step **324** to increment the current attribute pointer. At step **326**, it is determined if all of the attributes have been processed. If not, the process loops back to step **320**. If all of the attributes have been processed and either applied to the content or skipped, the process proceeds to step **328** to determine if any startup attributes are present. If no startup attributes are present, the process ends at step **332**. If startup attributes are present, the process proceeds to step **330** where the system processes the startup attributes. The startup attributes may include starting applications with specific options, data files, window positions and sizes, etc., as well as other startup activities, operations, etc. The process then ends at step **332**.

FIG. **4** illustrates an embodiment of the process **400** for creating a new profile for multiple views in a single document. Multiple views into a single document can be useful for a wide variety of applications, including the simple examples of looking at multiple sections of a Word document in multiple windows simultaneously, viewing multiple sections of an Excel workbook simultaneously, or viewing multiple regions (perhaps at different zoom levels) of a digital photograph simultaneously in a photo-editing program. The new profile can save the complete layout, including which document is open, the associated window sizes, positions, zoom scales, etc., along with other settings such as position(s) within the document, if desired. This will allow the user to re-create the desired environment very quickly and easily. At step **402**, the content is either created or obtained. At step **404**, the user configures the attributes of the content such as formatting, window size, settings, hidden items, zoom scales, etc. At this point, the process can either proceed to step **406** or step **410**. If the process proceeds to step **406**, the user selects content from which to create a profile. The content could be, for example, the entire content of the document and its associated windows or one or more selected portions of the document. The process then proceeds to step **408** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **406**, the process can proceed to step **410** where the user requests the controller to define a profile. The process then proceeds to step **412** to select the content from which to create the profile. Again, this could be the entire content for the entire document and its associated windows or one or more selected portions of the document. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **412** by not selecting any content. The process then may optionally proceed to step **414** to select a name for the profile and, if desired, a description of the profile.

The process of FIG. **4** then proceeds to step **416** where the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. In the case of multiple views into a single document, the user might typically select items in categories dealing with window configuration and sizes, document positions (such as current page in a text document), zoom scales (perhaps on a per-window basis), etc., as well as any other desired attributes. The process may then optionally proceed to step **418** to define the profile type to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types are described above with respect to FIG. **1**B. As illustrated in FIG. **1**B, the user or multiple users may have multiple profiles such as first profile (P**1**) **152**, second profile (P**2**) **153**, and a third profile (P**3**) **154**. The user may then wish to link the first type (T**1**) **157**, which may be an audio

profile with profiles (P1) **152** and (P2) **153**, since both profiles (P1) **152** and (P2) **153** include audio categories. However, the user may associate or link the first profile type (T1) **157** with any particular profile, even though the profile may not include audio attributes. It is strictly up to the user how profile types will be linked to the particular profiles.

The process of FIG. **4** then proceeds to step **420** where the user is prompted to save the profile. At step **422**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **424**. If a profile name has been defined, the process proceeds directly to step **426**. At step **426** of FIG. **4**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in the document file and may be retrieved when the document file is opened. Further, the profile may be stored in an external file that may be linked to the document file. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. The process then proceeds to step **428** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **450**. If the user accepts the storage of the profile, as the user defines that storage in step **426**, the process proceeds to step **432**. At step **432**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **430**. If the profile is to be set as the default profile, the process proceeds to step **434** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **430**. At step **430**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds to directly to step **440**. If the profile is to be internally stored, the process proceeds to step **436**, where the system automatically selects the document as the storage destination. In other words, the profile attributes are stored as part of the document file. The process then proceeds to step **438** where the system stores the profile information within the document. If the selected profile has previously been stored within the document, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **440** to determine if the profile should be externally saved. If it is determined that the profile is not to be externally stored, the process proceeds to step **450** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **442**. At step **444**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user, depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **448**. If a dynamic link has been requested, the process proceeds to step **446** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **448**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **450**.

FIG. **5** illustrates an embodiment of a process **500** for creating a new profile for multiple views into multiple documents in a single application. Multiple views into multiple documents in a single application can be useful for a wide variety of purposes, including the simple examples of editing, viewing and/or comparing multiple sections of multiple Word documents in multiple windows simultaneously, editing, viewing and/or comparing multiple sections of multiple Excel workbooks simultaneously, or editing, viewing and/or comparing multiple regions (perhaps at different zoom levels) of digital photographs simultaneously in a photo-editing program. The new profile can save the complete layout, including which documents are open, the associated window sizes, positions, zoom scales, etc., along with other settings such as position(s) within each document, if desired. This will allow the user to re-create the desired environment very quickly and easily. At step **502**, the content is either created or obtained. At step **504**, the user configures the attributes of the content such as formatting, window size, settings, hidden items, zoom scales, etc.

After step **504** of FIG. **5**, the process can either proceed to step **506** or step **510**. If the process proceeds to step **506**, the user selects content from which to create a profile. The content could be the entire content of the documents and the associated windows or one or more selected portions or the documents. The process then proceeds to step **508** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **506**, the process can proceed to step **510** where the user initially requests the controller to define a profile. The process then proceeds to step **512** to select the content from which to create the profile. Again, this could be the entire content for the entire document or a selected portion, such as one or more paragraphs of a document. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **512** by not selecting any content. The process then may optionally proceed to step **514** to select a name for the profile and, if desired, a description of the profile. The process then proceeds to step **516** where the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. In the case of multiple views into multiple documents in a single application, the user would typically select items in categories

dealing with window configuration and sizes, document positions, zoom scales (perhaps on a per-window basis), etc., as well as any other desired attributes. The process may then optionally proceed to step **518** to define the profile type that the user desires to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types are described above with respect to FIG. **1**B.

The process of FIG. **5** then proceeds to step **520** where the user is prompted to save the profile. At step **522**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **524**. If a profile name has been defined, the process proceeds directly to step **526**. At step **526** of FIG. **5**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in one or more of the document files and may be retrieved when one of the document files containing the profile is opened. Further, the profile can be stored in an external file that may be linked to the document file. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. The process then proceeds to step **528** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **550**. If the user accepts the storage of the profile, as the user defines that storage in step **526**, the process proceeds to step **532**. At step **532**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **530**. If the profile is to be set as the default profile, the process proceeds to step **534** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **530**. At step **530**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds to directly to step **540**. If the profile is to be internally stored, the process proceeds to step **536**, where the destination document(s), or in other words, the documents which are to contain the profile information, are selected based on configuration options. In this case, the profile attributes are stored as part of the document file(s). The process then proceeds to step **538** where the system stores the profile information within the selected document(s). For each selected document, if the selected profile has previously been stored within the document, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **540** to determine if the profile should be externally saved. If it is determined that the profile is not to be externally stored, the process proceeds to step **550** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **542**.

The process of FIG. **5** then proceeds to step **544**. At step **544**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user, depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **548**. If a dynamic link has been requested, the process proceeds to step **546** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **548**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **550**.

FIG. **6** illustrates an embodiment of a process **600** for creating a new profile for multiple views into multiple documents in multiple applications. Multiple views into multiple documents in multiple applications can be useful for a wide variety of purposes, including the simple example of editing, viewing and/or comparing multiple sections of multiple types of documents simultaneously, such as editing or viewing multiple views of one or more Word documents, one or more Excel workbooks, one or more presentation documents, and one or more images. The new profile can save the complete layout, including which applications and documents are open, the associated window sizes, positions, zoom scales, etc., along with other settings related to each application, if desired. This will allow the user to re-create the desired environment very quickly and easily. At step **602**, the content is either created or obtained. At step **604**, the user configures the attributes of the content such as formatting, window sizes, settings, hidden items, zoom scales, etc. After step **604**, the process can either proceed to step **606** or step **610**. If the process proceeds to step **606**, the user selects content from which to create a profile. The content could be the entire content of the documents or one or more selected portions of any of the documents. The process then proceeds to step **608** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **606**, the process can proceed to step **610** where the user requests the controller to define a profile. The process then proceeds to step **612** to select the content from which to create the profile. Again, this could be the entire content for the entire document or a selected portion, such as one or more paragraphs of a document. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **612** by not selecting any content. The process then may optionally proceed to step **614** to select a name for the profile and, if desired, a description of the profile. The process then proceeds to step **616** where the user selects attributes of the content to be stored for future use.

These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. In the case of multiple views into multiple documents in multiple applications, the user would typically select items in categories dealing with window configuration and sizes, document positions, zoom scales (perhaps on a per-window basis), etc., as well as any other desired attributes. The process may then optionally proceed to step **618** to define the profile type that the user desires to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types are described above with respect to FIG. **1**B.

The process of FIG. **6** then proceeds to step **620** where the user is prompted to save the profile. At step **622**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **624**. If a profile name has been defined, the process proceeds directly to step **626**. At step **626** of FIG. **6**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in one or more of the document files and may be retrieved when one of the document files containing the profile is opened. Further, the profile can be stored in an external file that may be linked to the document file. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. The process then proceeds to step **628** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **650**. If the user accepts the storage of the profile, as the user defines that storage in step **626**, the process proceeds to step **632**. At step **632**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **630**. If the profile is to be set as the default profile, the process proceeds to step **634** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **630**. At step **630**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds to directly to step **640**. If the profile is to be internally stored, the process proceeds to step **636**, where the destination document(s), or in other words, the documents which are to contain the profile information, are selected based on configuration options. In this case, the profile attributes are stored as part of the selected document file(s). The process then proceeds to step **638** where the system stores the profile information within the document(s). For each selected document, if the selected profile has previously been stored within the document, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **640** to determine if the profile should be externally saved. If it is determined that the profile is not to be externally stored, the process proceeds to step **650** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **642**.

The process of FIG. **6** then proceeds to step **644**. At step **644**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user, depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **648**. If a dynamic link has been requested, the process proceeds to step **646** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **648**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **650**.

FIG. **7** illustrates an embodiment of a process **700** for creating a new profile for video playback. This type of profile can apply to video playback on a variety of devices, including handheld video players, computer screens, multimedia projection systems, theater projectors, etc. This type of profile can save the entire environment, including (if applicable) lighting, power settings, audio settings, zoom scale, window size and position, language and captioning settings, playlists, etc. This will allow the user to re-create the desired environment very quickly and easily. At step **702**, the content is either created or obtained. At step **704**, the user configures the attributes of the content such as power settings, audio settings, window size(s), zoom scales, etc. After step **704**, the process can either proceed to step **706** or step **710**. If the process proceeds to step **706**, the user selects content from which to create a profile. The content could be the entire content of the documents or one or more selected portions of the document, such as one or more portions of a video file. The process then proceeds to step **708** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **706**, the process can proceed to step **710** where the user requests the controller to define a profile. The process then proceeds to step **712** to select the content from which to create the profile. As before, this could be the entire content for the entire video file or one or more selected portions, such as portions of a video file. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **712** by not selecting any content. The process then may optionally proceed to step **714** to select a name for the profile and, if

desired, a description of the profile. The process then proceeds to step **716** where the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. In the case of multiple views into a single document, the user would typically select items in categories dealing with window configuration and sizes, document positions, zoom scales (perhaps on a per-window basis), etc., as well as any other desired attributes. The process may then optionally proceed to step **718** to define the profile type to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types is described above with respect to FIG. **1**B.

The process of FIG. **7** then proceeds to step **720** where the user is prompted to save the profile. At step **722**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **724**. If a profile name has been defined, the process proceeds directly to step **726**. At step **726** of FIG. **7**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in the document file and may be retrieved when the document file is opened. Further, the profile may be stored in an external file that may be linked to the document file. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. The process then proceeds to step **728** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **750**. If the user accepts the storage of the profile, as the user defines that storage in step **726**, the process proceeds to step **732**. At step **732**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **730**. If the profile is to be set as the default profile, the process proceeds to step **734** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **730**. At step **730**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds to directly to step **740**. If the profile is to be internally stored, the process proceeds to step **736**, where the system automatically selects the document as the storage destination. In other words, the profile attributes are stored as part of the document file. The process then proceeds to step **738** where the system stores the profile information within the document. If the selected profile has previously been stored within the document, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **740** to determine if the profile should be externally stored. If it is determined that the profile is not to be externally stored, the process proceeds to step **750** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **742**.

The process of FIG. **7** then proceeds to step **744**. At step **744**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user, depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **748**. If a dynamic link has been requested, the process proceeds to step **746** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **748**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **750**.

FIG. **8** is an embodiment of a process **800** for recalling a video playback profile by selecting a file containing the video content. At step **802**, the user selects the desired video file (the "content"). At step **804**, the system determines if the content or controlling environment (such as the application containing the content) is configured to "use profiles." If the content is not programmed to use a profile at step **804**, or if the user has chosen not to "use profiles," the process proceeds directly to step **838** to end the process. If the content is programmed with an instruction to "use profiles" and the controlling environment is configured to "use profiles," the process proceeds to step **806** to determine if the content contains profiles or links to profiles. If the content does not contain profiles or links to profiles, the process proceeds to step **808**. If the content does contain profiles or links to profiles, the process proceeds to step **816** to determine if an automatic profile selection is activated. If the automatic profile selection is not activated, the process proceeds directly to step **808**. If the automatic profile selection is activated, the process proceeds to step **818** to determine if a default profile has been defined. If a default profile has not been defined, the process proceeds to step **808**. If a default profile, which may be a linked profile, has been defined, the process proceeds to step **820** to activate a default profile. The process then proceeds to step **822**.

At step **808** of FIG. **8**, a profile is selected by the user. This profile may come from a variety of sources, including internally stored profiles or externally stored profiles, such as those stored in databases, files and other sources. For this example of a video file, a likely source would be other video files (though other file types could certainly be used). The

process then proceeds to step **810** where the user can decide whether to apply all of the profile or only a portion of the profile. If the entire profile is to be applied, the process proceeds directly to step **814**. If only a portion of the profile or none of the profile is to be applied, the process proceeds to step **812**. At step **812**, the desired attributes of the profile are selected by the user. The attributes may be organized into multiple categories and subcategories. Categories are similar to groups as discussed above, but constitute a collection of related attributes. The multiple categories and subcategories allow the user to "select all" or "deselect all" for increased efficiency and flexibility when configuring a profile. The selections may be persistent, i.e., settings may be remembered between reboots/restarts, and may be stored and recalled as groups or profiles, as described above.

The process of FIG. **8** then proceeds to step **814** where the system creates a temporary profile based on user selections and sets the profile active. The process then proceeds to step **822** where the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created or if the default profile is not present or is corrupted, the process proceeds directly to step **838** and the process ends. If an active profile has been defined, the process proceeds to step **824** to reset the current attribute pointer in the active profile. In other words, a pointer is set in the profile to point to the current attribute in the profile. The process then proceeds to step **826** to determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, such as, in the case of a video playback profile, having a video environment different from the environment in which the profile was defined, i.e., no surround sound system, no video projection screen to lower, etc. The verification operation determines if the current attribute can be applied to the content, and if so, if the attribute data is valid for the content. If the current attribute is applicable and valid, the process proceeds to step **828** to apply the current attribute to the content. For the example of a video playback profile, some of the settings that might be adjusted could include power settings, screen saver being turned off and brightness adjustment for desktop playback, lighting settings and screen position for the projection room, audio settings such as surround sound and volume, and other initializing options, perhaps such as sending a signal for all cell phones, pagers, etc. to automatically switch into "Silent" mode. The process then proceeds to step **830**. If it is determined at step **826** that the current attribute is not applicable and valid, such as an attribute for projection screen position adjustment when the current environment does not include a projection screen, the process proceeds directly to step **830**. At step **830**, the current attribute pointer is incremented, meaning that the next attribute is accessed. The process then proceeds to step **832** to determine if all of the attributes have been accessed and applied to the content. If not, the process loops back to step **826**. If all of the attributes have been processed and either applied or skipped, the process proceeds to step **834** to determine if any startup attributes are present. If startup attributes are present, the process proceeds to step **836** to process the startup attributes which may include setting window size(s) and zoom scale (s), setting the starting position of the video, pausing the video to wait for user input, starting additional applications, activating control functions (such as sending a signal for all cell phones, pagers, etc. to automatically switch into "Silent" mode, as above), etc. The process then ends at step **838**. If it is determined at step **834** that there are no startup attributes present, the process ends at step **838**.

FIG. **9** is an embodiment of a process **900** for recalling a video playback profile by selecting the profile. At step **902**, the profile is selected. The process then proceeds to step **904** to determine if a video file (i.e. "content source") has been defined. If the content source has been defined, the process proceeds to step **908**. If the content source has not been defined, the process proceeds to step **906** to specify the content source, such as a video file or portion of a video file (though other sources may be used). At step **908**, content is loaded from the selected source, if necessary. The process then proceeds to step **910** to determine if the entire profile should be applied to the content. If so, the process proceeds directly to step **914**. If the entire profile is not to be applied to the content, the process proceeds to step **912** where the user selects attributes of the selected profile to be applied to the content. The user may use categories and subcategories each of which may have a "select all" and a "deselect all" to increase efficiency and flexibility, and to simplify the selection process. The selections may be persistent and may be stored and recalled as groups or profiles as defined previously. The process then proceeds to step **914** where the system creates a temporary profile using the selections of the user and sets the temporary profile active. The process then proceeds to step **916** where the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created (such as if the profile data is corrupted), the process proceeds to step **932** and ends. If it is determined at step **916** that an active profile has been defined, the process proceeds to step **918** where the system resets the current attribute pointer in the active profile. The process then proceeds to step **920** to determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, as described above. The verification operation determines if the current attribute can be applied to the content, and if so, if the attribute data is valid for the content. If the current attribute is not applicable and valid, such as an attribute to start an application that is not installed on the destination computer, the process proceeds to step **924**. If the current attribute is applicable and valid, the process proceeds to step **922** where the current attribute is applied to the content. For the example of a video playback profile, some of the settings that might be adjusted could include power settings, screen saver being turned off and brightness adjustment for desktop playback, lighting settings and screen position for the projection room, audio settings such as surround sound and volume, and other initializing options, perhaps such as sending a signal for all cell phones, pagers, etc. to automatically switch into "Silent" mode. The process then proceeds to step **924**. At step **924**, the current attribute pointer is incremented, meaning that the next attribute is accessed. At step **926**, it is determined if all of the attributes have been processed. If not, the process loops back to step **920**. If all of the attributes have been processed and either applied to the content or skipped, the process proceeds to step **928** to determine if any startup attributes are present. If no startup attributes are present, the process ends at step **932**. If startup attributes are present, the process proceeds to step **930** where the system processes the startup attributes. The startup attributes for a video playback profile may include setting window size(s) and zoom scale(s), setting the starting

position of the video, pausing the video to wait for user input, starting additional applications, etc. The process then ends at step **932**.

FIG. **10** illustrates an embodiment of a process **1000** for creating a new profile for CAD objects. This type of profile can apply to a variety of CAD systems and objects (both 2-D and 3-D), as well as any non-CAD application that utilizes data as objects. One use of this type of profile is to store the window size(s) and position(s), view settings, zoom levels, lighting settings, transparency, wireframe settings, units, background color, screen saver/power settings, etc. An additional use is to store the positions of objects, both relative to each other and within the CAD window(s), as well as the viewpoint, i.e., what the user sees in the window, which takes into account the view angle, the view direction, the "up" direction (needed to determine correct view orientation), etc. This will allow the user to re-create the desired environment very quickly and easily. At step **1002**, the content is either created or obtained. At step **1004**, the user configures the attributes of the content such as window size(s), zoom scales, view settings, part positions, view positions, etc. After step **1004**, the process can either proceed to step **1006** or step **1010**. If the process proceeds to step **1006**, the user selects content from which to create a profile. The content could be the entire content of the CAD application or one or more selected portions of the CAD data, such as one or more CAD objects. The process then proceeds to step **1008** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **1006**, the process can proceed to step **1010** where the user requests the controller to define a profile. The process then proceeds to step **1012** to select the content from which to create the profile. As before, this could be the entire content of the CAD application or one or more selected portions, such as CAD objects. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **1012** by not selecting any content. The process then may optionally proceed to step **1014** to select a name for the profile and, if desired, a description of the profile. The process then proceeds to step **1016** where the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. In the case of a CAD application, the user might typically select items in categories dealing with window configuration and sizes, object positions, zoom scales (perhaps on a per-window basis), view positions and settings, etc., as well as any other desired attributes. The process may then optionally proceed to step **1018** to define the profile type to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types is described above with respect to FIG. **1**B.

The process of FIG. **10** then proceeds to step **1020** where the user is prompted to save the profile. At step **1022**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **1024**. If a profile name has been defined, the process proceeds directly to step **1026**. At step **1026** of FIG. **10**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in one or more of the document files and may be retrieved when one of the document files containing the profile is opened. Further, the profile can be stored in an external file that may be linked to the document file. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. The process then proceeds to step **1028** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **1052**. If the user accepts the storage of the profile, as the user defines that storage in step **1026**, the process may optionally proceed to step **1030** where the profile attributes may be transformed prior to storage. These transformations may include local and/or global referencing (such as modifying the attributes such as viewpoint position and zoom scale to be referenced in the coordinate system of each CAD object, if applicable, or adjusting attributes as needed if the CAD objects contain data that is shared with other objects). At the completion of step **1028** (or **1030**, if desired), the process proceeds to step **1034**. At step **1034**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **1032**. If the profile is to be set as the default profile, the process proceeds to step **1036** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **1032**. At step **1032**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds directly to step **1042**. If the profile is to be internally stored, the process proceeds to step **1038**, where the system automatically selects the CAD object file(s) as the storage destination, or the user may specify which CAD object files should contain the profile information. In other words, the profile attributes are stored as part of the CAD document file(s). The process then proceeds to step **1040** where the system stores the profile information within the selected document(s). For each selected document, if the selected profile has previously been stored within the document, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **1042** to determine if the profile should be externally saved. If it is determined that the profile is not to be externally stored, the process proceeds to step **1052** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **1044**.

The process of FIG. **10** then proceeds to step **1046**. At step **1046**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user,

depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **1050**. If a dynamic link has been requested, the process proceeds to step **1046** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **1050**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **1052**.

FIG. **11** is an embodiment of a process **1100** for recalling a profile for CAD objects by selecting the CAD content, which could be one or more CAD files, one or more CAD objects, etc. These objects could already be loaded in the system, or the process could be applied as the objects are loaded. At step **1102**, the user selects the desired CAD data (the "content"). At step **1104**, the system determines if the content or controlling environment (such as the application containing the content) is configured to "use profiles." If the content is not programmed to use a profile at step **1104**, or if the user has chosen not to "use profiles," the process proceeds directly to step **1138** to end the process. If the content is programmed with an instruction to "use profiles" and the controlling environment is configured to "use profiles," the process proceeds to step **1106** to determine if the content contains profiles or links to profiles. If the content does not contain profiles or links to profiles, the process proceeds to step **1108**. If the content does contain profiles or links to profiles, the process proceeds to step **1116** to determine if an automatic profile selection is activated. If the automatic profile selection is not activated, the process proceeds directly to step **1108**. If the automatic profile selection is activated, the process proceeds to step **1118** to determine if a default profile has been defined. If a default profile has not been defined, the process proceeds to step **1108**. If a default profile, which may be a linked profile, has been defined, the process proceeds to step **1120** to activate a default profile. The process then proceeds to step **1122**.

At step **1108** of FIG. **11**, a profile is selected by the user. This profile may come from a variety of sources, including internally stored profiles or externally stored profiles, such as those stored in databases, files and other CAD objects, as well as other sources. For this example of a CAD object, a likely source would be other CAD objects. The process then proceeds to step **1110** where the user can decide whether to apply all of the profile or only a portion of the profile. If the entire profile is to be applied, the process proceeds directly to step **1114**. If only a portion of the profile or none of the profile is to be applied, the process proceeds to step **1112**. At step **1112**, the desired attributes of the profile are selected by the user. The attributes may be organized into multiple categories and subcategories. Categories are similar to groups as discussed above, but constitute a collection of related attributes. The multiple categories and subcategories allow the user to "select all" or "deselect all" for increased efficiency and flexibility when configuring a profile. The selections may be persistent, i.e., settings may be remembered between reboots/restarts, and may be stored and recalled as groups or profiles as described above.

The process of FIG. **11** then proceeds to step **1114** where the system creates a temporary profile based on user selections and sets the profile active. The process then proceeds to step **1122** where the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created or if the default profile is not present or is corrupted, the process proceeds directly to step **1138** and the process ends. If an active profile has been defined, the process proceeds to step **1124** to reset the current attribute pointer in the active profile. In other words, a pointer is set in the profile to point to the current attribute in the profile. The process then proceeds to step **1126** to determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, such as, in the case of a CAD profile, having a visual environment different from the environment in which the profile was defined, i.e., a different screen resolution, different objects loaded, etc. The verification operation determines if the current attribute can be applied to the content, and if so, if the attribute data is valid for the content. If the current attribute is applicable and valid, the process proceeds to step **1128** to apply the current attribute to the content. For the example of a CAD profile, some of the settings that might be adjusted could include view position, lighting/shading, zoom scale, default drawing settings, etc. The process then proceeds to step **1130**. If it is determined at step **1126** that the current attribute is not applicable and valid, the process proceeds directly to step **1130**. At step **1130**, the current attribute pointer is incremented, meaning that the next attribute is accessed. The process then proceeds to step **1132** to determine if all of the attributes have been accessed and applied to the content. If not, the process loops back to step **1126**. If all of the attributes have been processed and either applied or skipped, the process proceeds to step **1134** to determine if any startup attributes are present. If startup attributes are present, the process proceeds to step **1136** to process the startup attributes which may include setting window size(s) and zoom scale(s), starting additional applications, etc. The process then ends at step **1138**. If it is determined at step **1134** that there are no startup attributes present, the process ends at step **1138**.

An example of how the process of FIG. **11** might be used is the generation of a parts list and/or bill of material, collectively referred to as parts list, for a collection of objects in a CAD system. In this rather common situation, the user may desire to have a list of objects currently being used (such as for manufacturing purposes). Further, the user may desire to have a picture of each object included in the list to know what each object looks like, particularly useful for people in manufacturing and/or purchasing roles.

Prior to generating the parts list, each the objects may have had a "preferred view" (i.e. which angle, view settings, etc should be used as a default when viewing said object) defined using a process such as the one shown in FIG. **10**. The user may specify which objects should be included in the parts list, including selecting "All Objects." The parts list may then be generated, either by the CAD system itself or by an additional program or process, resulting in a list of objects, and perhaps additional information for each object such as object count, material, part number, etc. Before, during, or after the parts list generation, a picture, such as a screen shot or thumbnail may be generated for each object,

with the picture using the preferred view for that object. If no valid preferred view is available for said object, such as if one was never stored, or the data has become corrupted, the preferred view of the parent object, if applicable, may be used, depending on system configuration and/or which options are set. Additionally, this option to use the preferred view of the parent object may be extended to include additional levels all the way up to the top-level object(s), if desired. In some instances, the user may specify how many levels to search, i.e., 2 levels would include the parent object and the grandparent object or the parent's parent. Further, if no preferred view is available for the object or its parents, the picture may be generated using a user-specified default view, the system default view, or no picture at all, depending on configuration options.

The pictures generated for each object may then be included in the parts list, such as in a document where each object is next to or references its associated picture, with the pictures embedded within the document. Further, if the type of parts list does not provide a means to embed the pictures, the pictures may be delivered either together with the parts list or separately, using any means desired, whether electronic or otherwise.

FIG. **12** is an embodiment of a process **1200** for recalling a CAD profile by selecting the profile. At step **1202**, the profile is selected. The process then proceeds to step **1204** to determine if a CAD object or objects (i.e. "content source") has been defined. If the content source has been defined, the process proceeds to step **1208**. If the content source has not been defined, the process proceeds to step **1206** to specify the content source such as a CAD object or objects (which may or may not already be loaded). At step **1208**, content is loaded from the selected source, if necessary. The process then proceeds to step **1210** to determine if the entire profile should be applied to the content. If so, the process proceeds directly to step **1214**. If the entire profile is not to be applied to the content, the process proceeds to step **1212** where the user selects attributes of the selected profile to be applied to the content. The user may use categories and subcategories each of which may have a "select all" and a "deselect all" to increase efficiency and flexibility, and to simplify the selection process. The selections may be persistent and may be stored and recalled as groups or profiles as defined previously. The process then proceeds to step **1214** where the system creates a temporary profile using the selections of the user and sets the temporary profile active. The process then proceeds to step **1216** where the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created (such as if the profile data is corrupted), the process proceeds to step **1232** and ends. If it is determined at step **1216** that an active profile has been defined, the process proceeds to step **1218** where the system resets the current attribute pointer in the active profile. The process then proceeds to step **1220** to determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, as described above. The verification operation determines if the current attribute can be applied to the content, and if so, if the attribute data is valid for the content. If the current attribute is not applicable and valid, such as an attribute to start an application that is not installed on the destination computer, the process proceeds to step **1224**. If the current attribute is applicable and valid, the process proceeds to step **1222** where the current attribute is applied to the content. For the example of a CAD profile, some of the settings that might be adjusted could include view position, lighting/shading, zoom scale, default drawing settings, etc. The process then proceeds to step **1224**. At step **1224**, the current attribute pointer is incremented, meaning that the next attribute is accessed. At step **1226**, it is determined if all of the attributes have been processed. If not, the process loops back to step **1220**. If all of the attributes have been processed and either applied to the content or skipped, the process proceeds to step **1228** to determine if any startup attributes are present. If no startup attributes are present, the process ends at step **1232**. If startup attributes are present, the process proceeds to step **1230** where the system processes the startup attributes. The startup attributes for a CAD profile could include setting window size(s) and zoom scale(s), starting additional applications, etc. The process then ends at step **1232**.

FIG. **13** is an embodiment of a process **1300** for obtaining a profile from one source and applying it to data or content from a separate source. At step **1302**, the user creates or obtains the content from the desired source (for example, the user might open a Word document). After step **1302** is complete, the process may proceed to either step **1304** or **1310**. If the user proceeds to step **1304**, the user may then select the desired portion of the content (which may include the entire content) to which the profile will be applied. The process then proceeds to step **1306** where the user requests the controller to recall or apply a profile. The process then proceeds to step **1308**, where the user selects a profile from another source (such as another Word document or a profile stored in some other external location). The process then proceeds to step **1316**. Alternatively, after step **1302**, the user may proceed to step **1310**. At step **1310**, the user requests the controller to recall or apply a profile. The process then proceeds to step **1312** where the user selects a profile from another source (such as another Word document or a profile stored in an external location). The process then proceeds to step **1314** where the user specifies the portion of the content (possibly the entire content) to which the profile will be applied. The process then proceeds to step **1316**.

At step **1316** of FIG. **13**, the user chooses whether to apply all elements of the profile to the selected portion of the content. If the entire profile is to be applied, the process proceeds directly to step **1320**. If only a portion or the profile (including none of the profile) is to be applied, the process proceeds to step **1318**. At step **1318**, the user specifies which attributes are to be applied to the content. The attributes may be organized into multiple categories and subcategories. Categories are similar to groups as discussed above, but constitute a collection of related attributes. The multiple categories and subcategories allow the user to "select all" or "deselect all" for increased efficiency and flexibility when configuring a profile. The selections may be persistent, i.e., settings may be remembered between reboots/restarts, and may be stored and recalled as groups or profiles as described above.

The process of FIG. **13** then proceeds to step **1320** where the system creates a temporary profile based on user selections and sets the profile active. The process then proceeds to step **1322** where the system determines if an active profile has been defined. If an active profile has not been defined, or in other words, if the temporary profile was not successfully created or is corrupted, the process proceeds directly to step **1338** and the process ends. If an active profile has been defined, the process proceeds to step **1324** to reset the current attribute pointer in the active profile. In other words, a pointer is set in the profile to point to the current attribute in the profile. The process then proceeds to step **1326** to

determine if the current attribute is applicable and valid. This verification enables profiles to be applied to various types of content that may not be identical to the content from which the original profile was generated, such as recalling a Word document profile on a computer different from the computer on which the profile was defined, i.e., there may be different fonts installed, etc. The verification operation determines if the current attribute can be applied to the content, and if so, if the attribute data is valid for the content. If the current attribute is applicable and valid, the process proceeds to step **1328** to apply the current attribute to the content. The process then proceeds to step **1330**. If it is determined at step **1326** that the current attribute is not applicable and valid, such as an attribute for a font that is not installed on the current computer, the process proceeds directly to step **1330**. At step **1330**, the current attribute pointer is incremented, meaning that the next attribute is accessed. The process then proceeds to step **1332** to determine if all of the attributes have been accessed and applied to the content. If not, the process loops back to step **1326**. If all of the attributes have been processed and either applied or skipped, the process proceeds to step **1334** to determine if any startup attributes are present. If startup attributes are present, the process proceeds to step **1336** to process the startup attributes which may include starting additional applications, etc. The process then ends at step **1338**. If it is determined at step **1334** that there are no startup attributes present, the process ends at step **1338**.

FIG. **14** illustrates an embodiment of a process **1400** for creating a new profile for an operating system user configuration. This type of profile can apply to any operating system and device combination, including computer desktops, portable computing and/or media devices, automobile controllers, building management systems, digital video recording devices, etc. This type of profile can store the entire environment, including (if applicable) security settings, screen resolution, brightness, power settings, screensaver settings, shortcuts, desktop layout, open applications, application settings for applications, etc. This will allow the user to re-create the desired environment very quickly and easily. At step **1402**, the user creates and/or obtains the content environment (such as logging on to the system). At step **1404**, the user configures the attributes of the operating system and environment as listed above. After step **1404**, the process can either proceed to step **1406** or step **1410**. If the process proceeds to step **1406**, the user selects content from which to create a profile. The content could be the entire environment (open applications, power settings, etc.—virtually the entire configuration) or only selected portions (such as only screen and power settings). The process then proceeds to step **1408** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **1406**, the process can proceed to step **1410** where the user requests the controller to define a profile. The process then proceeds to step **1412** to select the content from which to create the profile. As before, this could be the entire environment or only selected portions. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **1412** by not selecting any content. The process then may optionally proceed to step **1414** to select a name for the profile and, if desired, a description of the profile. The process then proceeds to step **1416** where the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. In the case of a desktop operating system configuration, the user would typically select items in categories dealing with power settings, security settings, window configuration and sizes, document positions, zoom scales (perhaps on a per-window basis), network settings, printer settings, etc., as well as any other desired attributes. The process may then optionally proceed to step **1418** to define the profile type to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types is described above with respect to FIG. **1**B.

The process of FIG. **14** then proceeds to step **1420** where the user is prompted to save the profile. At step **1422**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **1424**. If a profile name has been defined, the process proceeds directly to step **1426**. At step **1426** of FIG. **14**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in the operating system's settings and may be retrieved when the operating system loads or the user logs in. Further, the profile may be stored in an external file. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. The process then proceeds to step **1428** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **1450**. If the user accepts the storage of the profile, as defined in step **1426**, the process proceeds to step **1432**. At step **1432**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **1430**. If the profile is to be set as the default profile, the process proceeds to step **1434** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **1430**. At step **1430**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds to directly to step **1440**. If the profile is to be internally stored, the process proceeds to step **1436**, where the system automatically selects the operating system as the storage destination. In other words, the profile attributes are stored as part of the settings of the operating system. The process then proceeds to step **1438** where the system stores the profile information within the settings of the operating system. If the selected profile has previously been stored within the settings of the operating system, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **1440** to determine if the profile should be externally stored. If it is determined that the profile is not to be externally stored, the process proceeds

to step **1450** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **1442**.

The process of FIG. **14** then proceeds to step **1444**. At step **1444**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user, depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **1448**. If a dynamic link has been requested, the process proceeds to step **1446** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **1448**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **1450**.

FIG. **15** illustrates an embodiment of a process **1500** for creating a new profile for a vehicle based on driver preferences. This type of profile can apply to any vehicle, including automobiles, trucks, buses, motorcycles, airplanes, etc. This type of profile can store the entire environment, including (if applicable) climate control, seat positions and settings, audio system settings and presets, engine performance settings, navigation system settings, mirror settings, etc. This will allow the user to re-create the desired environment very quickly and easily. At step **1502**, the user creates and/or obtains the content environment (such as getting into the vehicle). At step **1504**, the user configures the attributes of the content as listed above. After step **1504**, the process can either proceed to step **1506** or step **1510**. If the process proceeds to step **1506**, the user selects content from which to create a profile. The content could be the entire environment or only selected portions (such as only audio system settings). The process then proceeds to step **1508** where the user requests the controller to define a profile. Alternatively, rather than proceeding to step **1506**, the process can proceed to step **1510** where the user requests the controller to define a profile. The process then proceeds to step **1512** to select the content from which to create the profile. As before, this could be the entire environment or only selected portions. If the user desires to create a generic profile without selecting specific content, the user may effectively skip step **1512** by not selecting any content. The process then may optionally proceed to step **1514** to select a name for the profile and, if desired, a description of the profile. The process then proceeds to step **1516** where the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts and/or different drivers/operators, and may be stored and recalled as groups or profiles. In the case of an automobile profile, the user would typically select items in categories dealing with audio settings, engine performance settings, seat and mirror positions, etc., as well as any other desired attributes. The process may then optionally proceed to step **1518** to define the profile type to store. Again, the profile types are defined by the user. For example, one or more profiles may have already been created and stored in the system. As described in FIG. **1**B, a user or multiple users may have multiple profiles which can be classified into profile types. The creation of profile types and the use of these profile types are described above with respect to FIG. **1**B.

The process of FIG. **15** then proceeds to step **1520** where the user is prompted to save the profile. At step **1422**, it is determined whether a profile name has been defined. If not, the user defines a profile name and (optional) description at step **1524**. If a profile name has been defined, the process proceeds directly to step **1526**. At step **1526** of FIG. **15**, the user defines the storage type or types for the profile. For example, the profile may be stored internally in the vehicle's internal engine computer settings and may be retrieved when the car is started or when the driver provides identification. Further, the profile may be stored in an external file, perhaps on a USB drive. Still further, the profile may be stored in an external database, as described above, with respect to FIG. **1**A. This database may be located in a location geographically separate from the vehicle, and may be accessed via a wireless network, for instance. The process then proceeds to step **1528** where the user accepts storage of the profile or cancels that storage. If the user cancels storage, the process ends at step **1550**. If the user accepts the storage of the profile, as the user defines that storage in step **1526**, the process proceeds to step **1532**. At step **1532**, it is determined whether the profile should be set as the default profile. If the profile should not be set as the default profile, the process then proceeds directly to step **1530**. If the profile is to be set as the default profile, the process proceeds to step **1534** to flag the profile as the default profile. This indicator of which profile is the default profile may be stored with the content. If a default profile is already defined, the user may (optionally, depending on configuration options) be prompted to confirm that the new profile should become the default profile, in which case the profile that was previously the default profile will no longer be the default profile. The process then proceeds to step **1530**. At step **1530**, the system determines if the profile is to be internally stored. If the profile is not to be internally stored, the process proceeds to directly to step **1540**. If the profile is to be internally stored, the process proceeds to step **1536**, where the system automatically selects the vehicle engine computer as the storage destination. In other words, the profile attributes are stored as part of the vehicle's settings. The process then proceeds to step **1538** where the system stores the profile information within the vehicle engine computer. If the selected profile has previously been stored within the vehicle engine computer, the user may be prompted to confirm that the profile information should be changed or updated, as well as to specify whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). The profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional changes and/or usage. The process then proceeds to step **1540** to determine if the profile should be externally stored.

If it is determined that the profile is not to be externally stored, the process proceeds to step **1550** and ends. If it is determined that the profile is to be externally stored, the system assigns a unique ID to the profile at step **1542**.

The process of FIG. **15** then proceeds to step **1544**. At step **1544**, the system determines if a dynamic link has been requested. A dynamic link provides a "live" uni- or bi-directional link between the document and the stored profile, which means that if the stored profile changes (such as by another user), the user will be (optionally) notified of the change and (also optionally) prompted whether the changed profile should be applied to the content, or if the defining aspects of the profile change, the stored profile may be automatically updated (with or without prompting the user, depending on configuration options). Dynamic links are more fully described above. If a dynamic link has not been requested, the process proceeds to step **1548**. If a dynamic link has been requested, the process proceeds to step **1546** where the system internally flags the link as a dynamic link that is accessed using the profile name and/or identifier. At step **1548**, the profile is saved to an external location such as a database, file system, etc. If the selected profile has previously been stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step **1550**.

FIG. **16**A illustrates an embodiment of a process **1600** for using an intermediate user interface (UI) to define and/or store multiple profiles. This type of interface could be used in many situations, including, for example, a CAD software package. In such an interface, the profile data may be temporarily maintained in memory (including volatile or non-volatile RAM, disk memory, etc.) or in another location prior to being stored in a more permanent location (such as with a data object or data file or in external storage as previously disclosed). A detailed view **1640** of such an intermediate UI is shown in FIG. **16**B. The detailed view **1640** illustrates buttons **1642**, **1644**, and **1646** representing multiple storage locations, each with two indicators to identify if said storage location contains data and if said data is "current," i.e., if the stored data matches the current settings (whether user-specified or system-specified). These indicators are represented respectively by items **1648** and **1650** for storage location 0 and **1652** and **1654** for storage location 1. Of course, each pair of indicators could also be replaced by other indicators, including a single multi-color indicator, such as one that is grey or white when its associated storage location is empty, which changes to green when its associated storage location contains a profile, and which changes to red if the profile in its associated storage location matches the current settings. Clicking the buttons can automatically recall and apply (as previously disclosed) the profile data stored in the associated storage location. Button **1642**, representing storage location 0, is a different color to indicate the "default profile" as described above, i.e., in this embodiment, any profile stored in position 0 will be assigned as a default profile when the profile data stored in the UI is attached to an object or otherwise stored. Further, if profile data is read from any profile data source, and the profile data contains a default profile, this default profile will be loaded into position 0. UI **1640** also contains a popup menu **1656** that can be displayed when the user clicks on a menu item or button (including right-clicking on one of the buttons, for example button **1646**). Popup menu **1656** contains menu items (Define) **1658**, (Clear) **1660**, (Load) **1662**, (Attach) **1664**, (Edit) **1666**, and (Detach) **1668**, as well as any other menu items that may be appropriate, including items such as "Recall," etc. Such menu items (i.e. "Attach") may be used to initiate functions that will store the profile information in a more permanent manner (including storing multiple profiles simultaneously), as detailed above in the description of the various profile creation processes.

The process of FIG. **16**A begins at step **1602**, where the user configures the content. In the case of a CAD package, the user can adjust the lighting, shading, zoom scale, viewpoint, visible objects, etc. The indicators in the intermediate UI **1630** show that no profiles are stored in any of the 5 storage locations (numbered 0 through 4), and that none of the storage locations is current, which is the case with no stored profiles. The process then proceeds to step **1604**, where the user requests the system to define a profile. This is accomplished via the sample UI by right-clicking on the button for storage location 0 and selecting "Define" from the popup menu. The process then proceeds to step **1606** where the system checks to see if any selection options have been defined previously, i.e., if a pre-defined set of attributes exists that will determine what will be contained in newly-defined profiles. If selection options have been defined the process proceeds to step **1610** where the system determines if the user has requested a manual override of the selection options. If the user has not requested a manual override, the process proceeds directly to step **1612**. If at step **1606** it is determined that no selection options have been defined, or if at step **1610** the user has chosen to override the default selection options, the process proceeds to step **1608**. At step **1608**, the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. The process then proceeds to step **1612**. At step **1612**, if profile data already exists in the selected storage location, the user may be prompted whether to overwrite the existing data. The user may choose not to overwrite the existing data if it has not already been stored in a non-volatile location. If the user chooses to overwrite the existing data, or if no profile data is present in the selected storage location, the data is stored internally in the location from which the user initiated the "Define" operation (in this case, location 0). After step **1612**, the indicators in intermediate UI **1632** show that location 0 has a profile defined and that said profile is current, and that locations 1 through 4 are still empty.

The process of FIG. **16**A then proceeds to step **1614** where the user re-configures the content. As before, in the case of a CAD package, the user could adjust the lighting, shading, zoom scale, viewpoint, visible objects, etc. As the settings change, if the stored profile no longer matches the current settings, the "current" indicator in the intermediate UI **1634** turns off. The process then proceeds to step **1616**, where the user again requests the system to define a profile. As before, this is done via a right-click on the button representing the desired storage location and selecting "Define" from the popup menu, though in this case the user selects location 2 as the desired storage location (leaving location 1 empty). The process then proceeds to step **1618**

where the system checks to see if any selection options have been defined. If selection options have been defined the process proceeds to step **1622** where the system determines if the user has requested a manual override of the selection options. If the user has not requested a manual override, the process proceeds directly to step **1624**. If at step **1618** it is determined that no selection options have been defined, or if at step **1622** the user has chosen to override the default selection options, the process proceeds to step **1620**. At step **1620** the user selects attributes of the content to be stored for future use. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. The process then proceeds to step **1624**. At step **1624**, if profile data already exists in the selected storage location, the user may be prompted whether to overwrite the existing data. If the user chooses to overwrite the existing data, or if no profile data is present in the selected storage location, the data is stored internally in the location from which the user initiated the "Define" operation (location 2 in this case). After step **1624**, the indicators in intermediate UI **1636** show that locations 0 and 2 each have a profile defined and that the profile stored in location 2 is current, and that locations 1, 3 and 4 are still empty. The process then proceeds to step **1626** and ends.

FIG. **17** illustrates an embodiment of a process **1700** for using an intermediate user interface (UI) to recall a profile. As detailed previously, this type of interface can be used in many situations, including, for example, a CAD software package. Using the interface, the profile data may be temporarily maintained in memory (including volatile or non-volatile RAM, disk memory, etc.) prior to being stored in a more permanent location, such as with a data object or data file or in external storage as previously disclosed. Further, the profile data may be either created by the user or loaded from a profile source including both internal and external data sources. An example of such an intermediate UI is shown in FIG. **16**B and is detailed above.

As the process of FIG. **17** begins, the indicators in intermediate UI **1720** show that locations 1, 3, and 4 are empty, and that locations 0 and 2 each have a profile defined, with the profile in location 2 marked as current, meaning that the settings of the profile stored in location 2 match the current settings. At step **1702**, the user requests the system to recall the profile stored in location 0. This may be done in multiple ways. Using the UI illustrated in FIG. **16**B, this is accomplished by simply clicking on the button representing storage location 0. If the popup menu **1656** in FIG. **16**B contains an option to "Recall" a profile, the user can also right-click on the button representing storage location 0 and select "Recall" from the popup menu. The process then proceeds to step **1704** where the system checks to see if any selection options have been defined. If selection options have been defined the process proceeds to step **1708** where the system determines if the user has requested a manual override of the selection options. If the user has not requested a manual override, the process proceeds directly to step **1710**. If at step **1704** it is determined that no selection options have been defined, or if at step **1708** the user has chosen to override the default selection options, the process proceeds to step **1706**. At step **1706** the user selects attributes of the content to be recalled. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e., remembered between reboots/restarts, and may be stored and recalled as groups or profiles. The process then proceeds to step **1710**, where the system recalls the profile data from storage location 0 and applies it to the current settings based on the user's selection options. The indicators in intermediate UI **1722** will then indicate that storage locations 1, 3, and 4 are still empty, that storage locations 0 and 2 contain profile data, and that the profile stored in location 0 is current. It is important to note that when a profile is recalled, if the selection options result in the entire profile not being applied, the "current" indicator for the chosen location may not be activated since the stored settings may not match the current settings. The process then proceeds to step **1712** and ends.

FIG. **18** illustrates an embodiment of a process **1800** for using the invention via an intermediate user interface (UI) to remove a stored profile from the intermediate UI. As detailed previously, this type of interface can be used in many situations, including, for example, a CAD software package. In such an interface, the profile data may be temporarily maintained in memory (including volatile or non-volatile RAM, disk memory, etc.) prior to being stored in a more permanent location, such as with a data object or data file or in external storage as previously disclosed. Further, the profile data may be either created by the user or loaded from a profile source including both internal and external data sources. An example of such an intermediate UI is shown in FIG. **16**B and is detailed above.

As the process of FIG. **18** begins, the indicators in intermediate UI **1820** show that locations 1, 3, and 4 are empty, and that locations 0 and 2 each have a profile defined, with the profile in location 2 marked as current, meaning that the settings of the profile stored in location 2 match the current settings. At step **1802**, the user requests the system to clear the profile stored in location 2. This may be done in multiple ways. Using the UI of FIG. **16**B, this is accomplished by simply right-clicking on the button representing storage location 2 and selecting "Clear" from the popup menu. The process then proceeds to step **1804** where the system may optionally (based on configuration options) prompt the user to confirm deletion of the profile data. If the user confirms deletion of the profile, or if the system is configured not to confirm profile deletion, the process proceeds to step **1806**, where the data stored in location 2 is deleted. At this point, the indicators in intermediate UI **1822** show that storage locations 1 through 4 are now empty, and that only location 0 contains profile data. The profile stored in location 0 is not current, however as no action was taken to recall/apply this profile. The process then proceeds to step **1810** and ends. If the user does not confirm deletion of the profile, the process proceeds to step **1808** where the process ends with no action taken. In this case, since no action was taken, the indicators in intermediate UI **1824** are unchanged from those in intermediate UI **1820** as described above.

FIG. **19** illustrates an embodiment of a process **1900** for loading one or more profiles into an intermediate user interface (UI) for profile management. As detailed previously, this type of interface could be used in many situations, including, for example, a CAD software package. In such an interface, the profile data may be temporarily maintained in memory (including volatile or non-volatile RAM, disk memory, etc.) prior to being stored in a more permanent location, such as with a data object or data file or in external storage as previously disclosed. Further, said profile data may be either created by the user or loaded from a profile

source including both internal and external data sources. An example of such an intermediate UI is shown in FIG. **16**B and is detailed above.

As the process of FIG. **19** begins, the indicators in intermediate UI **1940** show that locations 1, 3, and 4 are empty, and that locations 0 and 2 each have a profile defined, with the profile in location 2 marked as current, meaning that the settings of the profile stored in location 2 match the current settings. At step **1902**, the user requests the system to load profiles from an internal or external source. This may be done in multiple ways. In the sample UI of FIG. **16**B, this is accomplished by simply right-clicking on any of the buttons representing storage locations and clicking "Load" from the popup menu. The process then proceeds to step **1904** where the user specifies the source(s) from which to load the profile(s). The process then proceeds to step **1906** where the system checks to see if the user has chosen to load all data from all profiles. If the user has chosen to load all data from all profiles, the process proceeds directly to step **1910**. If the user has chosen not to load all data from all profiles, the process proceeds to step **1908**. At step **1910**, the system determines if the user has requested a manual override of the load and selection options. If the user has not requested a manual override, the process proceeds directly to step **1912**. If at step **1906** it is determined that the user does not wish to load all data from all profiles, or if at step **1910** the system determines that the user has chosen to override the default selection options, the process proceeds to step **1908**. At step **1908** the user selects which profiles from the selected source(s) to load, as well as which of the stored profile attributes should be loaded. These attributes may be provided in categories and subcategories, each of which may include an option to "select all" or "deselect all." The selection of attributes may be persistent, i.e. remembered between reboots/restarts, and may be stored and recalled as groups or profiles. The process then proceeds to step **1912**. At step **1912**, the system determines if any of the storage locations are currently storing profile data. If so, the process proceeds to step **1914** where the user is optionally (based on configuration options) prompted to confirm that the new profile data should be loaded, and may also be prompted (again, based on configuration options) as to whether the new profile data should replace the existing profile data or be added to it. If the user does not confirm that the new profile data should be loaded, the process proceeds to step **1916** and ends, in which case the indicators in intermediate UI **1942** are unchanged from those in intermediate UI **1940**, as described above. If the user confirms that the new data should be loaded, the process proceeds to step **1918** where the selected profile(s) are loaded from the selected source(s), either replacing the existing profile data or being added to the existing profile data, possibly as additional profiles. In this example, the user has chosen a profile source containing 4 profiles, and these profiles are loaded into storage locations 0 through 3, though the locations may vary depending on configuration options. For example, if none of the 4 profiles was marked as a default profile, the profile data might be loaded into storage locations 1 through 4, reserving location 0 for a default profile. The process then proceeds to step **1920** where the system checks to see if a default profile has been loaded, which in this example would be loaded into storage location 0. If a default profile is present, the process proceeds to step **1922** where the system checks to see if the system configuration is set to use the default profile. If the system is set up to use the default profile, the process proceeds to step **1924** where the default profile is recalled and applied as previously disclosed. The process then proceeds to step **1926** and the process ends. The indicators in intermediate UI **1944** will then indicate the status of the new profile information, which in this case shows that storage locations 0 through 3 contain profile data, and storage location 4 is empty, with the default profile (stored in location 0) currently active. If the system is not set up to use a default profile, the process proceeds to step **1928** and the process ends. The indicators in intermediate UI **1946** will then indicate the status of the new profile information, which in this case shows that storage locations 0 through 3 contain profile data, and storage location 4 is empty, with no profile currently active. If, at step **1920**, a default profile is not present, such as if none of the loaded profiles was marked as a default profile, the process proceeds to step **1930** and the process ends. The indicators in intermediate UI **1948** will then indicate the status of the new profile information, which in this case shows that storage location 0 (the default profile) is empty, and storage locations 1 through 4 contain profile data, with no profile currently active.

FIG. **20**A illustrates an embodiment of a process **2000** for using an enhanced intermediate user interface (UI) to define and work with multiple sets of profiles. This type of interface could be used in many situations, including, for example, a CAD software package. In such an interface, the sets of profile data may be temporarily maintained in memory, including volatile or non-volatile RAM, disk memory, etc., prior to being stored in a more permanent location, such as with a data object or data file or in external storage as previously disclosed. An example of such an intermediate UI is shown in FIG. **20**B. This UI is very similar to the UI detailed in FIG. **16**B, with the addition of components to facilitate working with multiple sets of profile data. This sample UI comprises buttons representing multiple storage locations (represented by buttons **2062**, **2064**, **2066**, **2068**, and **2070**), each with two indicators to identify if said storage location contains data and if said data is "current," i.e., if the stored data matches the current settings (whether user-specified or system-specified). These indicators are represented respectively by items **2080** and **2082** for storage location 4, with corresponding indicators for each of the other storage locations. Of course, each pair of indicators could also be replaced by other indicators, including a single multi-color indicator as previously described. Clicking any of the buttons representing the storage locations automatically recalls and applies the profile data stored in the associated storage location. Button **2062**, representing storage location 0, is a different color to indicate the "default profile" as described above. This UI also may contain a popup menu similar in form and function to menu **1656** shown in FIG. **16**B and discussed previously. Such a menu can be used to initiate functions to work with and modify profile information, including loading and storing multiple profiles simultaneously as disclosed previously.

The UI shown in FIG. **20**B also contains buttons **2072**, **2074**, and **2078**, as well as position indicator **2076**. These UI elements allow use of multiple sets of profile data. In this embodiment, the sets of profile data may be accessed as a list, with each set of profile data as one element of the list. Further, each set of profile data may have its own "top-level" profile that may be associated with each of its data components as detailed below. Button **2072** may be used to create a new set of profile data (i.e. a new item in the list), and buttons **2074** "Previous" and **2078** "Next" may be used to move to the previous or next items in the list, respectively, functioning similarly to the "Back" and "Forward" buttons that are commonly found in web browsing applications. When no sets of profile data are defined, the "Back" and

"Forward" buttons **2074** and **2078** may be disabled, just as the "Back" button **2074** may be disabled when the current set of profile data is at the beginning of the list, and the "Forward" button **2078** may be disabled when the current set of profile data is at the end of the list. Position indicator **2076** shows the current position of the "active" set of profile data in the list, and may also show the total number of sets of profile data in the list. Buttons **2074** and **2078** and position indicator **2076** each provides a method, via a popup or pulldown menu to facilitate direct access to sets of profile data located at any position in the list. Button **2072** automatically creates a new set of profile data when clicked, and may also have an associated menu such as item **2090**, which can provide an interface to operations which may include: adding a new set of profile data, deleting a set of profile data, attaching or detaching one or more sets of profile data (such as for storage purposes) to one or more objects, updating the "top-level" profile, etc. When adding a new set of profile data, the user may specify whether to replace an existing set of profile data or to add the set of profile data to the list. If the new set of profile data is to be added to the list, the location in which it is added may be determined by configuration options, determined by the user's selections, etc.

As the process of FIG. **20**A begins, the indicators in intermediate UI **2050** show that all storage locations 0 through 4 are empty, and the "0/0" in the position indicator shows that no sets of profile data have been defined. In an alternative embodiment, this "empty set" may be considered as the first set in the list, i.e., the position indicator may show "1/1" even with no profile sets defined (since the user may define profiles, which would be part of the current set). The process of FIG. **20**A begins at step **2002**, where the user requests the system to create a new set of profile data by clicking on the "Sets" button. The process then proceeds to step **2004**, where the user may optionally specify what will be included in the top-level profile for the new set of profile data. In the case of a CAD package, the user might specify which objects are visible on the screen, etc. The process then proceeds to step **2006**, where the system creates a new set of empty profile data, makes the newly created set active, and creates (if specified) the top-level profile for the newly created set of profile data. After step **2006**, the position indicator shows "1/1" in intermediate UI **2052**, meaning that the current set of profile data is in position 1 and that the total number of sets is 1. Also, intermediate UI **2052** shows that storage locations 0 through 4 are empty, i.e., no profiles have been defined for the current (in this case newly-defined) set of profile data. The process then proceeds to step **2008**, where the system determines if the components of the top-level profile contain profiles or links to profiles. If these components do not contain profiles or links to profiles, the process proceeds directly to step **2020**. If the components contain profiles or links to profiles, the process proceeds to step **2010**. At step **2010**, if the system is not configured to automatically load profiles, the process proceeds directly to step **2020**, otherwise the process proceeds to step **2012**. At step **2012**, the system reads the profiles as specified by the top-level profile components, and loads them into the appropriate storage locations for the newly defined profile set. The process then proceeds to step **2014**. At step **2014**, if a default profile is not defined, the process proceeds directly to step **2020**, otherwise the process proceeds to step **2016**. At step **2016**, if the system is not configured to use the default profile, the process proceeds directly to step **2020**, otherwise the process proceeds to step **2018**. At step **2018**, the default profile (which would be stored in location 0 in this example) is applied to the content, and the process proceeds to step **2020**. In this case, if no profiles were loaded from the top-level profile components, the intermediate UI **2054** remains unchanged from item **2052** since no changes were made to the set of profile data.

At step **2020**, the user may re-configure the content and create one or more new profiles using a process similar to process **1600** as disclosed above. After these profile definitions are complete, intermediate UI **2056** shows that the current set of profile data is still the only one ("1/1"), that storage locations 3 and 4 are still empty, and that in the current profile set, profiles have been defined for storage locations 0, 1, and 2, and that the profile in location 2 is now current.

The process of FIG. **20**A then proceeds to step **2022**, where the user again requests the system to create a new set of profile data by clicking on the "Sets" button. The process then continues to step **2024**, where the user may optionally specify what will be included in the top-level profile for the new set of profile data. As before, in the case of a CAD package, the user might specify which objects are visible on the screen (such as a different set of objects than was specified for the previous set), etc. The process then proceeds to step **2026**, where the system creates a new set of empty profile data, makes the newly created set active, and creates (if specified) the top-level profile for the newly created set of profile data. After step **2026**, intermediate UI **2058** shows that the current set of profile data is in position 2 out of a total of 2 sets, and that all of the storage locations for the current set of profile data are empty. The process then proceeds to step **2028**, where the system determines if the components of the top-level profile contain profiles or links to profiles. If these components do not contain profiles or links to profiles, the process proceeds directly to step **2040** and ends. If the components contain profiles or links to profiles, the process proceeds to step **2030**. At step **2030**, if the system is not configured to automatically load profiles, the process proceeds directly to step **2040** and ends, otherwise the process proceeds to step **2032**. At step **2032**, the system reads the profiles as specified by the top-level profile components, and loads them into the appropriate storage locations for the newly defined profile set. The process then proceeds to step **2034**. At step **2034**, if a default profile is not defined, the process proceeds directly to step **2040** and ends, otherwise the process proceeds to step **2036**. At step **2036**, if the system is not configured to use the default profile, the process proceeds directly to step **2040**, otherwise the process proceeds to step **2038**. At step **2038**, the default profile (which would be stored in location 0 in this example) is applied to the content, and the process proceeds to step **2040** and ends. In this example, if the user specifies top-level components that contain profiles, and these profiles are loaded from the top-level profile components into storage locations 0, 2, 3, and 4, and if the system is configured to use the default profile (stored in location 0), then the intermediate UI **2060** shows that the current set of profile data is the second of a total of 2 ("2/2"), that in the current profile set, storage location 1 is empty and profiles have been defined for storage locations 0, 2, 3, and 4, and that the default profile (stored in location 0) is now current. The process then proceeds to step **2040** and ends.

FIG. **21** shows the embodiment of a process **2100** to use the invention via the intermediate user interface (UI) of FIG. **20**B to recall profiles and sets of profiles such as those described in Process **2000** above. This example process is simplified by assuming that "use default profile" is turned on, i.e., if a default profile exists then it will be automatically recalled/applied when its corresponding set of profile data is

activated. This simplification is intended to show how the multiple sets of profile data can be used in a working environment. This type of process could be used in many situations, including, for example, a CAD environment. In this example environment, Process **2100** assumes that 3 sets of profile data have been defined (as shown by the "3" in the position indicator "1/3") of intermediate UI **2170**. Each set of profile data may also have its own top-level profile information, which in the case of a CAD environment might contain the list of objects displayed on the screen. For example, the top-level profile associated with the set of profile data in position 1 might contain a list "AA" of objects. Similarly, the top-level profiles associated with the sets of profile data in positions 2 and 3 might respectively contain lists of objects "BB" and "CC." In this simple example, the profiles which make up each set in the list may be configured to store only viewpoint data and zoom scale, i.e., applying a profile changes the angle and zoom scale at which the on-screen objects are viewed. This UI and associated settings might be used to allow a user to easily build a presentation using the actual CAD data where the user may easily move between defined sets of objects (the sets of profile data with their top-level profiles), with each set having its own pre-defined sets of viewpoints and zoom scales (the profiles stored in each set of profile data).

The process of FIG. **21** begins with intermediate UI **2170** showing that 3 sets of profile data are defined, and that the set of profile data stored in position 1 is active. UI **2170** also indicates that the current set of profile data has profiles stored in locations 0, 1, and 2, and that the profile stored in location 1 is current. In other words, the current set of profile data (set 1) and its top-level profile will display the "AA" list of objects on the screen, and the viewpoint and zoom scale (the "view") is as defined by the profile information stored in location 1. The process begins at step **2102**, where the user requests the system to move to the next set of profile data by clicking on the "Next" button **2078**. The process then proceeds to step **2104**, where the system loads the set of profile data from position 2 into the UI. The process then proceeds to step **2106**, where the system recalls/applies the top-level profile for this set of profile data i.e. changes the displayed objects to the "BB" list of objects. The process then proceeds to step **2108**, where the system recalls/applies the default profile (stored in position 0), which changes the viewpoint and zoom scale to match the stored data. At this point, UI **2172** shows that the set of profile data in position 2 is active, has profiles stored in locations 0, 1, 3, and 4, and that the profile stored in location 0 is current. The process then proceeds to step **2110**, where the user again requests the system to move to the next set of profile data by clicking the "Next" button **2078**. The process proceeds as above to steps **2112** and **2114**, where the system loads the set of profile data from position 3 and applies the top-level profile (setting the displayed objects to the "CC" list of objects). However, since there is no default profile in the set of profile data stored in position 3, no default profile is applied i.e. the view may not change unless affected by other settings. At this point, UI **2174** shows that the set of profile data in position 3 is active, has profiles stored in locations 1, 2, and 4, and that none of the stored profiles is current.

The process of FIG. **21** then proceeds to step **2116**, where the user requests the system to move to the previous set of profile data by clicking the "Previous" button **2074**. The process then proceeds to steps **2118**, **2120**, and **2122** just as above in steps **2104**, **2106** and **2108**, at which point UI **2176** is identical to UI **2172** since none of the profile information changed for the set of profile data stored in position 2. The process then proceeds to step **2124**, where the user requests the system to recall the profile stored in location 3 by clicking on the "3" button **2068**. The process then proceeds to step **2126**, where the system recalls/applies the profile data stored in location 3, which sets the viewpoint and zoom scale to the values stored in the profile in location 3. UI **2178** then shows that the set of profile data in position 2 is active, has profiles stored in locations 0, 1, 3, and 4, and that the profile stored in location 3 is current. The process then proceeds to step **2128**, where the user again requests the system to move to the previous set of profile data by clicking the "Previous" button **2074**. The process then proceeds to steps **2130**, **2132**, and **2134**, where the set of profile data in location 1 is loaded into the UI, its top-level profile is activated (displaying object list "AA"), and its default profile is recalled/applied. UI **2180** then shows that the set of profile data in position 1 is active, has profiles stored in locations 0, 1, and 2, and that the default profile (stored in location 0) is current. This UI **2180** is very similar to UI **2170**, except that in UI **2180** the profile stored in location 0 is current due to the "Use default profile" setting. The process then proceeds to step **2136**, where the user again requests the system to move to the next set of profile data by clicking the "Next" button **2078**. The process then proceeds to steps **2138**, **2140**, and **2142**, just as above in steps **2118**, **2120**, and **2122**, at which point UI **2182** is identical to UI **2176** since no changes were made to the profile information. UI **2182** is also very similar to UI **2178** (the previous UI for position 2, when the profile stored in location 3 was current), but the current profile in UI **2182** is the default profile due to the "Use default profile" setting. The process the proceeds to step **2144** and ends.

FIG. **22** is a schematic diagram illustrating the systems **2200** for connecting a client to access and store profile data. FIG. **22** shows several embodiments illustrating various connection possibilities. Client **2202**, which could be any type of client such as a car, boat, other vehicle, desktop or mobile computer, PDA, mobile phone, etc, which is otherwise referred to herein as a client processing unit, configured for using profiles, may be connected to one or more sources of profiles. These connections may be (but are not required to be) simultaneous. Further, these sources of profiles may include any type of device capable of data storage, such as computers, USB flash drives, removable or fixed hard disk drives, data files, databases, etc, as well as any subsystem thereof, otherwise referred to herein as source processing units.

For example, client **2202** could obtain and/or store profile information over direct connections to its own internal profile storage **2204**. Further, client **2202** could obtain and/or store profile information over a direct connection to a removable storage device such as USB Flash Drive **2206** and/or other removable devices (such as writable media, removable media, external hard disk drives, etc). Still further, client **2202** could obtain and/or store profile information over a direct (wired, optical, etc) connection to a network **2208**. This network **2208** may comprise any type or combination of types of networks, including LAN, WAN, Wireless LAN, Virtual Private Networks, the Internet, etc, and may further comprise any type or combination of types of connections and/or network interfaces such as modem, Ethernet, etc, as well as any type or combination of types of wired or wireless connections **2212** such as Wireless LAN, RF link, etc. This network may further utilize any protocol or combination of protocols for transferring information to and from one or more profile repository or repositories such as profile servers **2210** and **2214**. Network **2208** may also

utilize encryption, data compression, and/or error correction to secure and enhance communications between the client and the profile repository or repositories. The repositories may include any type of data storage, including simple files, databases, documents, files or objects with embedded profile information, etc, and this data may be stored using any desired method and using any desired media or storage device or technology that are currently known to those skilled in the art.

Further, client **2202** can obtain and/or store profile information to or from one or more profile sources using a wireless link to satellite **2216**, which relays the information to and from satellite transceiver **2218**. In turn, satellite transceiver **2218**, which can be any device capable of communicating directly with a satellite, such as a broadcast tower, a personal or commercial satellite dish, a handheld satellite receiver/transmitter, etc, relays the information to and from one or more profile repositories such as profile servers **2220** and **2222**. These communications from satellite transceiver **2218** to the profile repositories may be accomplished using any desired type or combination of types of communications links, including direct (wired, optical, etc) and/or wireless communications links. The communications along the entire path from the client **2202** to a profile repository may be accomplished using any protocol or combination of protocols for transferring information, and may utilize encryption, data compression and/or error correction to secure and enhance communications between the client and repository or repositories. The repositories of profile information may include any type of data storage, including simple files, databases, documents, files or objects with embedded profile information, etc, and this data may be stored using any desired method and using any desired media or storage device or technology.

Client **2202** can also obtain and/or store profile information in one or more profile sources using one or more public communication links **2224**, such as a cellular or other wireless links, that are connected to one or more profile repositories, such as profile servers **2226** and **2228**. These public communication links **2224** to the profile repositories may be accomplished using any type or combination of types of communications links, including direct (wired, optical, etc) and/or wireless communications links. The communications along the entire path from client to profile repository may be accomplished using any protocol or combination of protocols for transferring information, and may utilize encryption, data compression and/or error correction to secure and enhance communications between the client and repository or repositories. The repositories may include any type of data storage, including simple files, databases, documents, files or objects with embedded profile information, etc, and this data may be stored using any desired method and using any desired media or storage device or technology.

Further, client **2202** can store and/or obtain profile information to and from one or more profile sources using a public wireless "HotSpot" such as public hotspot **2230**. This hotspot could be a public Internet café, or some other publicly-accessible network connection. In this example, client **2202** obtains and/or stores profile information over the wireless link at the public hotspot **2230**, which is connected to a network **2232**. Network **2232** may be any network or combination of networks including LAN, WAN, Wireless LAN, Virtual Private Networks, the Internet, etc, and may utilize any type or combination of types of communications links, including direct (wired, optical, etc) and/or wireless communications links. Network **2232** may further use any protocol or combination of protocols for transferring information, and may also utilize encryption, data compression and/or error correction to secure and enhance communications between the client and repository or repositories. The repositories may include any type of data storage, including simple files, databases, documents, files or objects with embedded profile information, etc, and this data may be stored using any desired method and using any desired media or storage device or technology. Network **2232** may be connected to one or more profile repositories, such as profile servers **2234**, **2236**, and **2240**. As described above, these connections may utilize wired and/or wireless connections, including those such as wireless link **2238**.

Client **2202** may also store and/or obtain profile information to and from one or more profile sources such as profile servers **2244** and **2246** using a private wireless network **2242** connected to a transceiver **2244**. This network may utilize any type of wireless communication, including microwave, Local Multipoint Distribution Services (LMDS), Multipoint to Multipoint Distribution Services (MMDS), commercial or residential wireless LAN, other RF communications, etc. Transceiver **2244** may be connected to one or more profile repositories, such as profile servers **2246** and **2248**. These connections may be accomplished using any desired type of communication including LAN, WAN, Wireless LAN, Virtual Private Networks, the Internet, etc, and may utilize any type or combination of types of communications links, including direct (wired, optical, etc) and/or wireless communications links. Network **2242**, as well as the communications links from transceiver **2244** to its profile repositories, may utilize any protocol or combination of protocols for transferring information, and may also utilize encryption, data compression and/or error correction to secure and enhance communications between the client and repository or repositories. The repositories may include any type of data storage, including simple files, databases, documents, files or objects with embedded profile information, etc, and this data may be stored using any desired method and using any desired media or storage device or technology.

FIG. **23** illustrates one embodiment of a multi-source profile showing how a profile can incorporate data from other profiles. Profile **2302** comprises six sections, each of which may contain data of a similar nature, although the data contained in each section need not be related. All of the data from section **2304** of profile **2302** is stored within the profile **2302**. Section **2306** contains data that is stored internally, and also contains an additional link to profile data stored externally (i.e. external to profile **2302**) in a different profile. This additional link information may include a profile ID (i.e. a unique identifier that may be assigned to a profile when said profile is defined and stored), file name, etc, and/or any additional information that may be used to specify the location of the linked data and which portions, including which sections and/or subsections, of said data should be included. The external reference in Section **2306** specifies that some or all of the data in a profile with a profile ID of "BB" should be included as if it were natively included in section **2306**. In a typical use model, the profile IDs will be significantly more complex to ensure uniqueness. However, for the sake of simplicity, this example uses very simple Profile IDs. When the profile data is read from section **2306** of profile **2302**, the reference to external data will cause the profile controller to attempt to find the referenced profile. The referenced profile could be located locally and/or remotely, including being stored in one or more profile repositories which may be accessed using a

wide variety of methods, such as those shown in FIG. **22**. In this case, profile ID "BB" references profile **2316**. Therefore, the profile controller reads the data from section **2318** of profile **2316**, and interprets section **2318** as though this data had been internally stored in section **2306** of profile **2302**.

All of the data for section **2308** of profile **2302** is stored internally within profile **2302**. Section **2310** of profile **2302** does not have any internal data, but does have an additional link to external profile data stored in a profile with an ID of "FF." Thus, when profile data is read from section **2310** of profile **2302**, the reference to external profile data causes the profile controller to attempt to locate the referenced profile. As above, the referenced profile can be located locally and/or remotely, including being stored in one or more profile repositories which may be accessed using a wide variety of methods, such as those shown in FIG. **22**. In this case, profile ID "FF" references profile **2320**. As such, the profile controller reads the data from section **2322** of profile **2320**, and interprets section **2322** as though this data had been internally stored in Profile **2302**.

Section **2312** of profile **2302** has data located in a variety of locations, including its own internal storage. When the profile controller reads the data for section **2312**, the reference to a profile with an ID of "JJ" causes the controller to search for the referenced profile. Again, the profile could be located locally and/or remotely, including being stored in one or more profile repositories which may be accessed using a wide variety of methods, such as those shown in FIG. **22**. In this case, profile ID "JJ" references profile **2324**, which is read by the profile controller to obtain the data in section **2326**. The profile data stored in section **2326** has both internal data and a reference to external data stored in a profile with an ID of "ZZ." In this instance, no section is specified, which may indicate that the entire contents of the profile with an ID of "ZZ" may be included. Thus, when the profile controller reads the data from section **2326**, the controller will attempt to locate a profile with an ID of "ZZ" and read the entire contents of that profile. Again, the profile could be located locally and/or remotely, including being stored in one or more profile repositories which may be accessed using a wide variety of methods, such as those shown in FIG. **22**. In this case, profile ID "ZZ" references profile **2328**. Hence, the profile controller reads the data from sections **2330**, **2332** and **2334** of profile **2328**, interprets the data as though this data had been internally stored in section **2326** of profile **2324**, and the resulting combined internal and referenced data from section **2326** is then interpreted by the profile controller as though the data had all been internally stored in section **2312**.

Section **2312** of profile **2302** also contains a reference to a profile with an ID of "LL." As above, the reference to external data causes the profile controller to attempt to locate the referenced profile, which could be located locally and/or remotely, including being stored in one or more profile repositories which may be accessed using a wide variety of methods, such as those shown in FIG. **22**. In this case, profile ID "LL" references profile **2336**. Hence, the profile controller reads the data from section **2338** of profile **2336**, and interprets it as though this data had been internally stored in Profile **2302**.

Section **2312** of profile **2302** also contains a reference to a profile with an ID of "MM." As above, the reference to external data causes the profile controller to attempt to locate the referenced profile, which could be located locally and/or remotely, including being stored in one or more profile repositories which may be accessed using a wide variety of methods, such as those shown in FIG. **22**. In this case, profile ID "MM" references profile **2340**. As such, the profile controller reads the data from section **2342** of profile **2340**, and interprets the data as though this data had been internally stored in profile **2302**.

Section **2314** of profile **2302** also has components of the profile data, and all of these components are stored internally within profile **2032**.

The profile controller's ability to access the remote profile data allows great flexibility and configurability to the top-level profile, e.g., profile **2302**, as the resulting data associated with profile **2302** appears to have all been internally stored. If any of the referenced profile information is changed or updated, profile **2302** can benefit from these changes as well, depending on configuration options. For instance, the user may be presented with the changes, and may also be informed what effect those changes could have, including a "preview" of the effects, and may then have the option whether accept or reject the changes; if all or some of the changes are rejected, those portions of the profile data that the user does not wish to overwrite with the new profile information may be kept intact and moved to internal storage, optionally replacing and/or removing the link to the external data source.

The foregoing description of the invention has been presented for purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise form disclosed, and other modifications and variations may be possible in light of the above teachings. The embodiment was chosen and described in order to best explain the principles of the invention and its practical application to thereby enable others skilled in the art to best utilize the invention in various embodiments and various modifications as are suited to the particular use contemplated. It is intended that the appended claims be construed to include other alternative embodiments of the invention except insofar as limited by the prior art.

What is claimed is:

1. A method of configuring a profile for a vehicle using settings from a first vehicle for use with at least one additional vehicle, using a profile controller, and making said profile available for use by said at least one additional vehicle, said method comprising:

receiving a request at a profile controller to define a vehicle user profile;

determining a selection of items for the profile based on a first vehicle, each of the items having an at least one user-configurable setting;

determining at least one attribute of the at least one user-configurable setting for each item of the selection of items of the profile;

combining the determined attributes to form said profile;

assigning a unique identifier to said profile using said profile controller when said profile has not previously been assigned a unique identifier;

storing said profile with said unique identifier using said profile controller in a profile repository; and

sending a notification that said profile with said unique identifier is available for application to a vehicle, said application including:

setting an attribute pointer to an attribute from said profile;

validating said attribute to determine if said attribute can be applied to a corresponding user-configurable setting of an item in said vehicle;

dynamically applying said attribute to the corresponding user-configurable setting of the item in said

vehicle to modify the user-configurable setting of the item when said attribute is validated; and

incrementing said attribute pointer such that each attribute of said profile is dynamically applied to a corresponding user-configurable setting of an item in said vehicle if said attribute is validated.

2. The method of claim **1** wherein the profile is formed as part of storing said profile in a profile repository.

3. The method of claim **1** wherein storing said profile in a profile repository further comprises:

updating an existing profile prior to storing it.

4. The method of claim **3** wherein updating an existing profile comprises:

automatically updating all attributes within said profile to reflect their current user-configurable settings; and

storing said updated profile in said profile repository using said profile controller.

5. The method of claim **3** wherein updating an existing profile comprises:

automatically updating all attributes of said profile to reflect their current user-configurable settings whenever at least one of the user-configurable settings associated with any of the attributes within said profile changes.

6. The method of claim **1** wherein said user-configurable settings comprise one or more of:

climate control settings, seat settings, audio system settings, engine performance settings, navigation system settings, sun/moonroof settings, display brightness settings, and/or mirror settings.

7. The method of claim **1** wherein determining a selection of items for the profile comprises:

automatically selecting all available items that have at least one user-configurable setting; and

automatically selecting all attributes of said available items.

8. The method of claim **7** wherein automatically selecting all attributes of said available items further comprises:

deselecting one or more attributes that are not to be included in the profile.

9. The method of claim **1** wherein storing said profile with said unique identifier using said profile controller in the profile repository comprises:

storing said profile with said unique identifier in the profile repository wherein said profile repository is located within said vehicle.

10. The method of claim **1** wherein storing said profile with said unique identifier using said profile controller in the profile repository comprises:

storing said profile with said unique identifier in the profile repository wherein said profile repository is located on a removable storage device.

11. The method of claim **1** wherein storing said profile with said unique identifier using said profile controller in the profile repository comprises:

storing said profile using said unique identifier in a profile repository wherein said profile repository is an external profile repository.

12. The method of claim **11** wherein said external profile repository is accessed through a network.

13. A method for modifying vehicle settings, comprising:

receiving a profile at a profile controller in a first vehicle, said profile including a plurality of user content presentation attributes for one or more user-configurable content settings for one or more items, said profile having been defined in a second vehicle different from said first vehicle;

said profile controller applying the profile to said first vehicle, said applying including:

setting a current attribute pointer to a current user content presentation attribute from said plurality of user content presentation attributes in said profile;

validating said current user content presentation attribute to determine if said current user content presentation attribute can be applied to a corresponding content setting of an item in said first vehicle;

dynamically applying said current user content presentation attribute to the corresponding content setting of the item in said first vehicle to modify the content setting of the item when said current user content presentation attribute is validated; and

incrementing said current attribute pointer so that each attribute of said plurality of user content presentation attributes is dynamically applied to its corresponding content setting if said current user content presentation attribute is validated.

14. The method of claim **13** wherein the profile defined in said second vehicle different from said first vehicle is based on:

a request received at a profile controller to define a profile for a user at the second vehicle;

a selection of items determined for the profile based on said second vehicle, each item of the selection of items having an at least one user-configurable setting; and

at least one attribute of the at least one user-configurable setting determined for each item of the selection of items of the profile.

15. The method of claim **13**, wherein the user configurable content settings include: climate control settings, seat settings, audio settings, engine settings, and/or navigation settings.

16. The method of claim **13**, wherein the user configurable content settings include display brightness settings and/or phone settings.

17. A non-transitory computer readable medium having computer readable instructions stored thereon that, when executed by a processor of a computer, cause the computer to:

receive a profile, the profile including a plurality of vehicle attributes for one or more user-configurable settings for one or more vehicle items; and

apply the received profile to a first vehicle, the application including instructions to:

set an attribute pointer to a vehicle attribute from the plurality of vehicle attributes in the profile;

validate the vehicle attribute to determine if the vehicle attribute can be applied to a corresponding user-configurable setting of one or more vehicle items of the first vehicle;

dynamically apply the vehicle attribute to the corresponding user-configurable setting of the one or more vehicle items in the first vehicle to modify the user-configurable setting of the one or more vehicle items when the vehicle attribute is validated; and

increment said attribute pointer so that at least one further vehicle attribute of the plurality of vehicle attributes is dynamically applied to a corresponding user-configurable setting of one or more vehicle items in the first vehicle if the at least one further vehicle attribute is validated.

18. The non-transitory computer readable medium of claim **17**, wherein the profile is defined in a second vehicle different from said first vehicle.

19. The non-transitory computer readable medium of claim **18**, wherein the profile is defined in the second vehicle based on:

a request to define a profile for a user at the second vehicle;

a selection of vehicle items determined for the profile based on said second vehicle, each vehicle item of the selection of vehicle items having an at least one user-configurable setting; and

at least one vehicle attribute of the at least one user-configurable setting determined for each vehicle item of the selection of vehicle items of the profile.

20. The non-transitory computer readable medium of claim **17**, wherein the user configurable content settings include: climate control settings, seat settings, audio settings, engine settings, display settings, and/or navigation settings.

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