IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

EMERGENT MOBILE LLC, **PLAINTIFF,** **v.** **SAMSUNG ELECTRONICS CO. LTD.; AND SAMSUNG ELECTRONICS AMERICA, INC.;** **DEFENDANTS.**	**Case No. 2:22-cv-107** **JURY TRIAL DEMANDED**

AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Emergent Mobile LLC ("Emergent Mobile"), by and through its undersigned counsel, files this Complaint against Defendants Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (collectively, "Defendants" or "Samsung") for patent infringement of United States Patent Nos. 9,819,506 and 9,097,530 (the "Patents-in-Suit"), and asserts as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. §§ 271, 281, 283, 284, and 285.

PARTIES

2. Plaintiff Emergent Mobile LLC is organized under the laws of Texas, having its principal place of business at 1150 Empire Central Place, #112, Dallas, Texas 75247.

3. On information and belief, Defendant Samsung Electronics Co. Ltd. ("SEC") is a corporation organized and existing under the laws of the Republic of Korea, with its principal place of business at 129 Samsung-ro, Maetan-3dong, Yeongtong-gu Suwon-si, Gyeonggi-do 16677, Suwon-Shi, Korea.

4. On information and belief, Defendant Samsung Electronics America, Inc. ("SEA") is a New York corporation having its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660, and maintains a place of business in this District at 6625 Excellence Way, Plano, Texas 75023.

5. On information and belief, SEC is the parent company of SEA.

6. Defendants sell, offers for sale, makes, uses, and/or imports smartphones, tablets, other mobile devices throughout the United States, including within this District that incorporate the infringing technologies.

JURISDICTION AND VENUE

7. This is a complaint for patent infringement that arises under the laws of the United States, Title 35 of the United States Code.

8. This Court has subject-matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338.

9. This Court has personal jurisdiction over Defendant SEC in this action because SEC has committed acts within this District giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over SEC would not offend traditional notions of fair play and substantial justice. Defendant SEC, directly and through subsidiaries or intermediaries (including distributors, resellers, and others), has committed and continues to commit acts of infringement in this District by, among other things,

offering to sell, using, and selling products that infringe the patents-in-suit, including the Samsung 4G cell phones and tablets.

10. This Court has personal jurisdiction over Defendant SEA in this action because SEA has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over SEA would not offend traditional notions of fair play and substantial justice. Defendant SEA, directly and through subsidiaries or intermediaries (including distributors, resellers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell, using, and selling products that infringe the patents-in-suit including the Samsung 5G cell phones and tablets. SEA is registered to do business in Texas and is in good standing for its franchise tax certification. On information and belief, SEA maintains a place of business at 6625 Excellence Way, Plano, Texas 75023. And SEA's registered agent for service of process is CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

11. Further, Samsung has committed patent infringement in this District; solicits and induces customers/users in this District; and has customers/users residing in this District who purchase, acquire, and/or use Samsung's infringing products in this District.

12. Based on the above, venue is proper in the Eastern District of Texas under 28 U.S.C. §§ 1391(b)–(c) and 1400. Defendant SEA maintains a place of business in this District at 1300 E. Lookout Dr., Richardson, TX 75082, and Defendant SEC is a foreign company doing business in the United States through SEA.

13. Joinder of the Defendants is also proper under 35 U.S.C. § 299 because Emergent asserts its right to relief against Defendants jointly, severally, or in the alternative with respect to or arising out of the same transaction, occurrence, or series of transactions or occurrences relating

to the making, using, importing into the United States, offering for sale, or selling of the same accused products or processes, including Samsung cell phones and tablets; and questions of fact common to all Defendants will arise in the action.

BACKGROUND AND THE ASSERTED PATENTS

United States Patent No. 9,819,506

14. On November 14, 2017, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,819,506 ("the '506 patent") entitled "Method for Transmission and Reception in Point-Multipoint Radio Broadcasting of Multilanguage Messages in Cellular Mobile Communications, Mobile Telecommunications Network and Mobile Terminal for the Embodiment of the Method" to inventor David F. Sorrells et al. Attached hereto as Exhibit A.

15. The '506 patent is presumed valid under 35 U.S.C. § 282.

16. Emergent Mobile owns all rights, title, and interest in the '506 patent.

Technical Description

17. The '506 Patent generally is directed to providing and implementing a point-to-multipoint radio broadcast transmission and reception of multilanguage messages in cellular mobile communications. *E.g.*,'506 Patent at 1:13-15. The '506 Patent claims are generally directed to technical improvements for transmissions of emergency messages in the prior art that risk that some users, connected to the transmitting radio base stations, might not understand the message contents. *Id.* at 2:14-17. As an example, the '506 Patent provides that when a message, *e.g.*, one of the aforementioned ETWS/CMAS messages, is to be broadcast to users within a particular geographic area, the telephone company can extract from the database information

about the nationality or the preferred language of each user who is located, at that instant, in that particular geographic area. *Id*. at 2:50-55.

United States Patent No. 9,097,530

18. On August 4, 2015, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,097,530 ("the '530 patent") entitled "Method For Ensuring Continuity Of Service Of A Personal Navigation Device And Device Thereof" to inventor Saverio Celia. Attached hereto as Exhibit B.

19. The '530 patent is presumed valid under 35 U.S.C. § 282.

20. Emergent Mobile owns all rights, title, and interest in the '530 patent.

Technical Description

21. The '530 Patent generally is directed to ensuring continuity of service of a personal navigation device which is used in the event of insufficient reception of GNSS satellite signals. *E.g.*, '530 Patent at 1:12-15. The '530 Patent claims are generally directed to technical improvements in personal navigation devices that comprise an inertial navigation system have the drawback that they can only work when an initial absolute position is known, which they cannot do without when the GNSS signal is unavailable. *Id.* at 3:25-30. As an example, the '530 Patent provides a process for ensuring continuity of service of a personal navigation device, which does not require to be brought into an open place when it is turned on after a long period of inactivity in order to be able to calculate its own position based on radioelectric signals coming from satellites of a GNSS system. *Id.* at 3:45-54.

CLAIMS FOR RELIEF

COUNT I – Infringement of United States Patent No. 9,819,506

22. Plaintiff hereby realleges paragraphs 1 through 26 as though fully set forth herein.

23. Samsung directly infringes (literally and/or under the doctrine of equivalents) the '506 patent by making, using, selling, offering for sale, and/or importing in/into the United States products covered by at least claims 8 and 10 of the '506 patent (collectively the "'506 Accused Products").

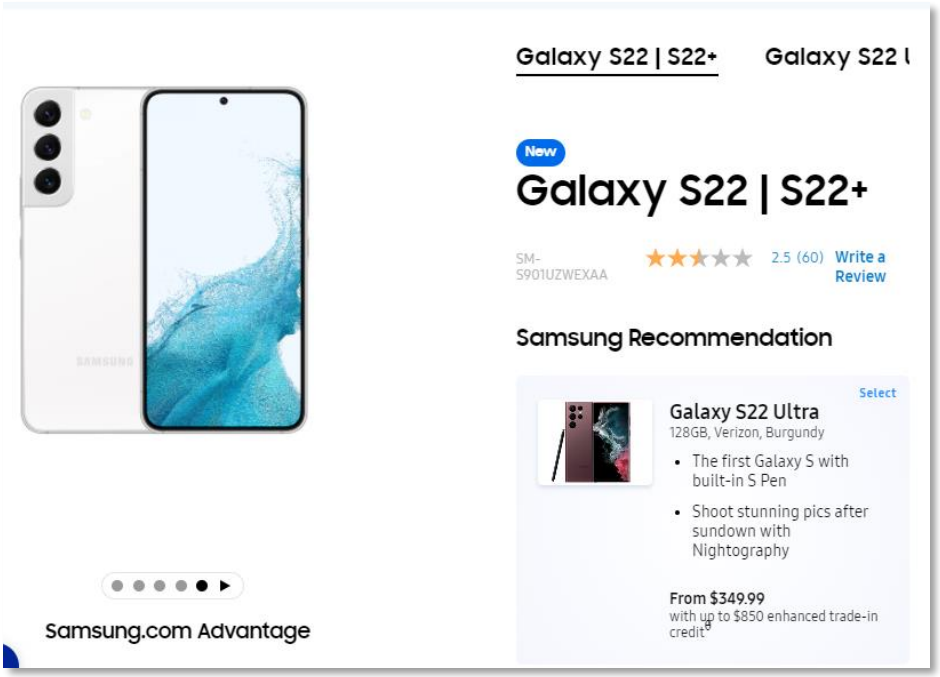
24. Samsung products that infringe one or more claims of the '506 patent include, but are not limited to, Galaxy S22 and all Samsung devices complying with the LTE standard. [1]

25. Regarding claim 8:

A mobile terminal configured to receive a broadcast message and adapted to operate in a cellular mobile telecommunications system with broadcast functionality,

Samsung's Galaxy S22 smartphones support LTE network and support Wireless Emergency Alerts (WEA) feature. LTE standard specification (*i.e.*, 3GPP TS 23.041 version 16.4) delineates technical realization of a cell broadcast service. The cell broadcast service delivers emergency alerts/messages on a mobile device configured for receiving ETWS (Earthquake and Tsunami Warning System) or CMAS (Commercial Mobile Alert System) messages. These messages are also known as wireless emergency alerts (WEA) where the mobile device is operating in an LTE network.

[1] Plaintiff reserves the right to add additional infringing devices for its infringement contentions.



Samsung Galaxy S22 / Galaxy S22 Ultra - Wireless Emergency Alerts

1. From a Home screen, swipe up from the center of the display to access the apps screen.
   → These instructions only apply to Standard mode and the default Home screen layout.
2. Navigate: **Settings** › **Notifications** › **Advanced settings**.
3. Tap **Wireless Emergency Alerts**.
4. Tap the **Allow alerts** switch to turn on or off:
   → Select any of the following to turn on or off.

   → Presidential alerts can't be disabled.

   - Extreme alerts
   - Severe alerts
   - AMBER alerts
   - Public safety messages
   - State and local test

ETSI TS 123 041 V16.4.0 (2020-07)

Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
5G;
Technical realization of Cell Broadcast Service (CBS)
(3GPP TS 23.041 version 16.4.0 Release 16)

2 General description

PWS provides a service that allows the network to distribute warning messages on behalf of public authority. PWS enables the distribution of ETWS, CMAS (aka WEA), KPAS and EU-Alert warning messages in GSM, UMTS, E-UTRAN, and NG-RAN.

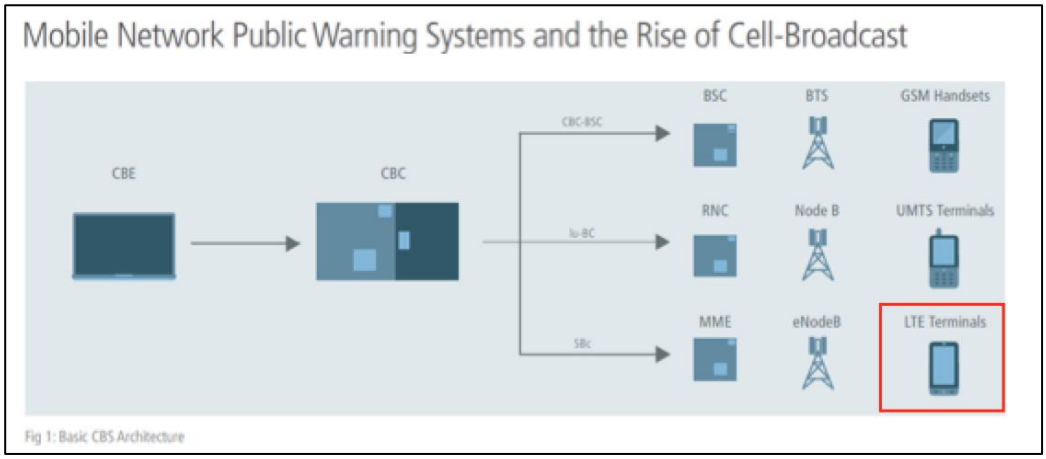
WEA Wireless Emergency Alert

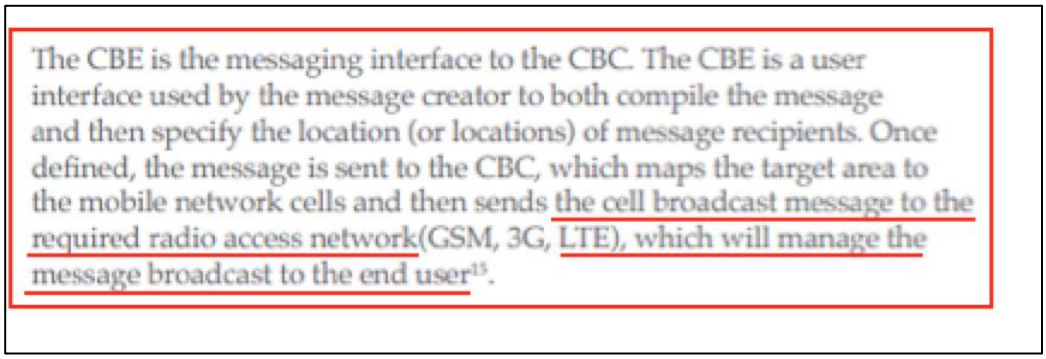
9.1.3 Warning Message Delivery

9.1.3.1 General

In E-UTRAN, an ETWS capable UE or a CMAS capable UE uses the procedures as outlined in subclause 9.1.3.4. See 3GPP TS 36.331 [36] for details on the radio interface.

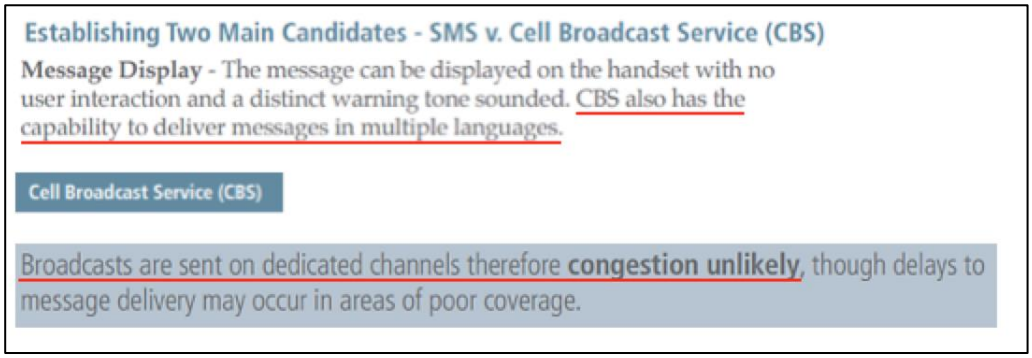
A UE in limited service state, and configured according to the USIM data file to display warning messages on that PLMN, shall display warning messages to the user.

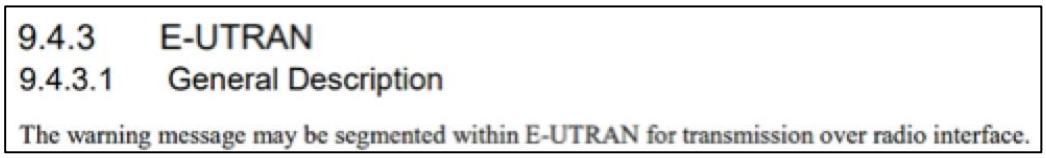


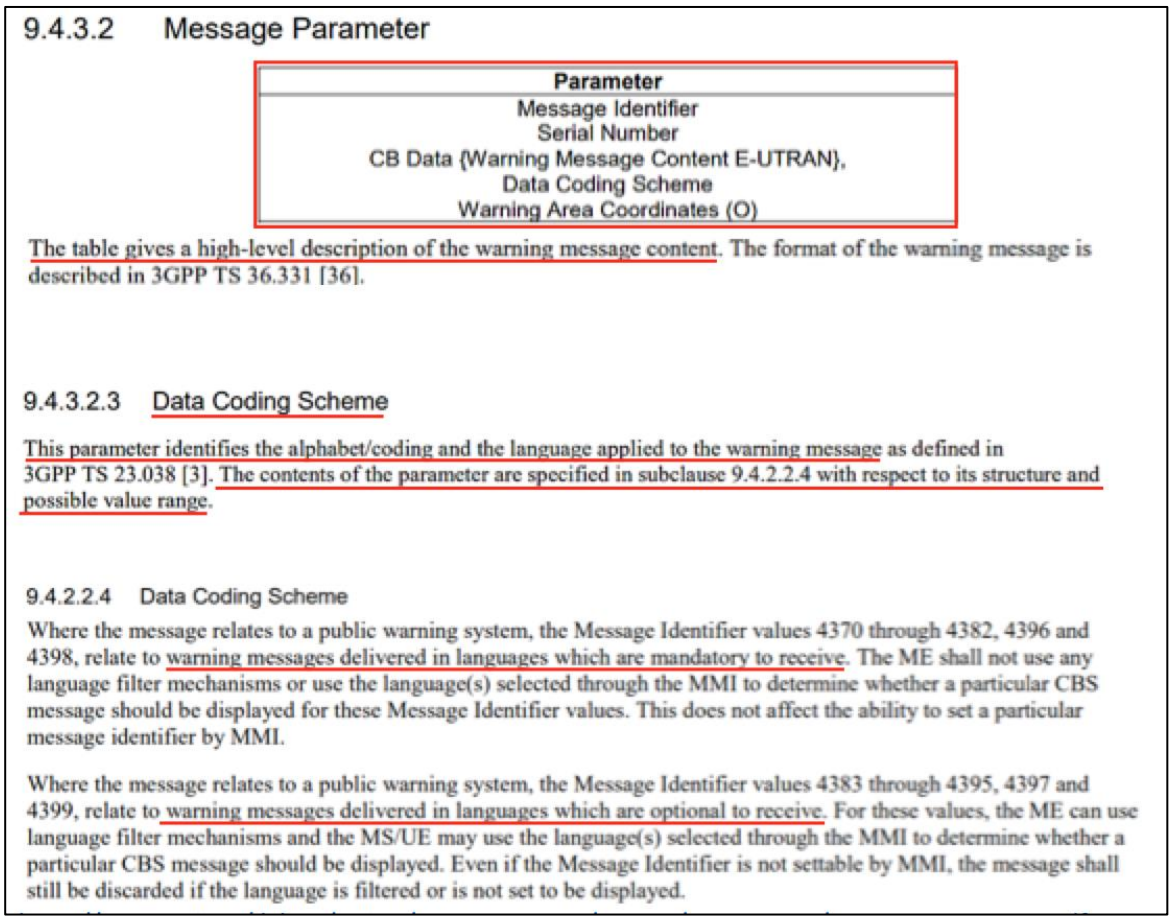

The CBE is the messaging interface to the CBC. The CBE is a user interface used by the message creator to both compile the message and then specify the location (or locations) of message recipients. Once defined, the message is sent to the CBC, which maps the target area to the mobile network cells and then sends the cell broadcast message to the required radio access network(GSM, 3G, LTE), which will manage the message broadcast to the end user[15].

receive one or more multilanguage broadcast messages from the cellular mobile telecommunications system, said one or more multilanguage broadcast messages being included in blocks of a broadcast channel in a set of languages preferred by users of a plurality of said mobile terminals;

The cell broadcast service can deliver emergency alert messages in multiple languages using dedicated broadcast channels where congestion is unlikely. As seen in below evidence, the messages include data coding scheme, which identifies the language applied to the message.

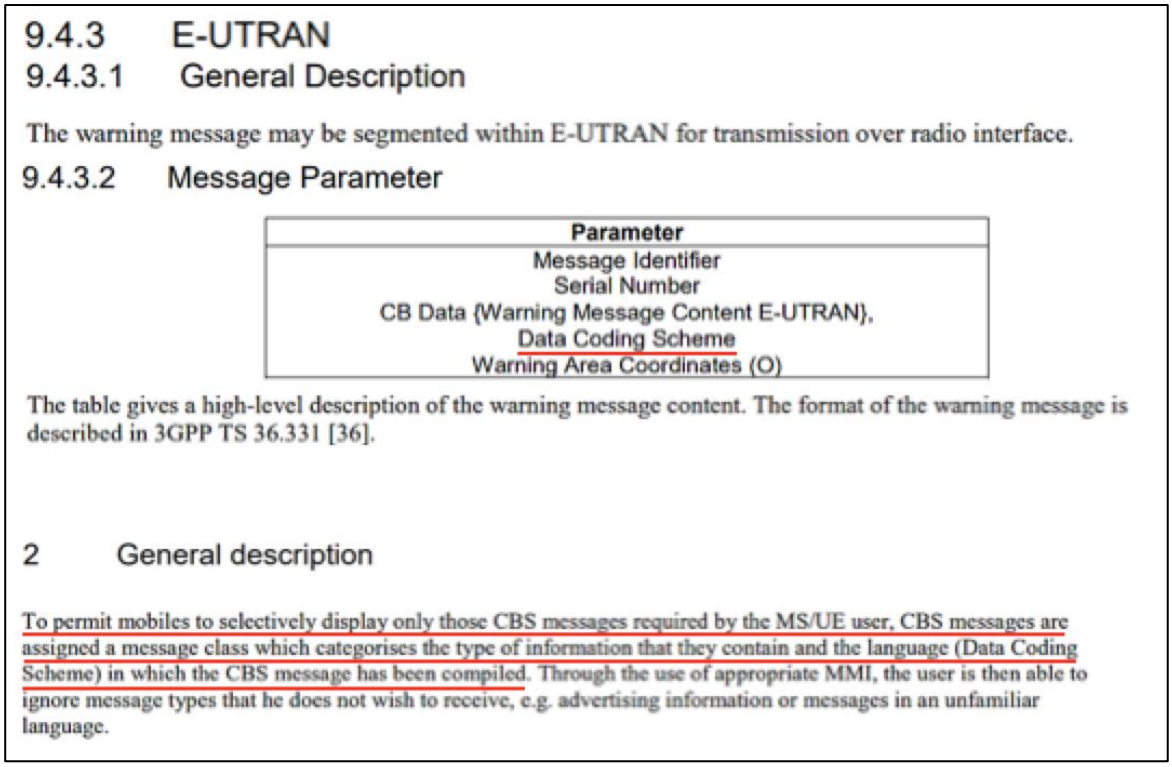






interpret a piece of information relating to at least one language identifier in each of said one or more multilanguage broadcast messages;

Using the data coding scheme contained in the messages, the mobile device interprets the messages.



9.4.3 E-UTRAN

9.4.3.1 General Description

The warning message may be segmented within E-UTRAN for transmission over radio interface.

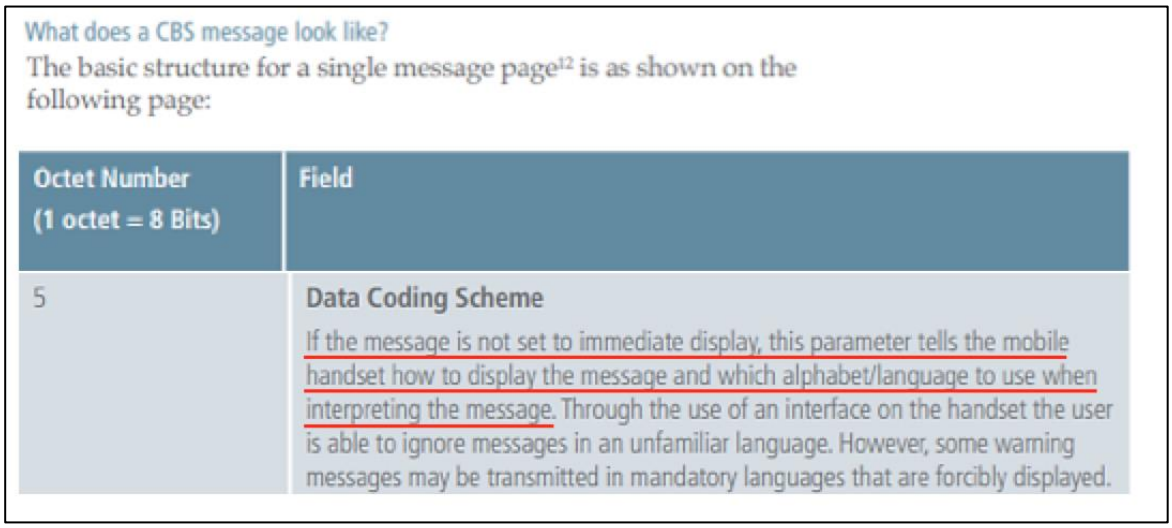
9.4.3.2 Message Parameter

Parameter
Message Identifier
Serial Number
CB Data {Warning Message Content E-UTRAN},
Data Coding Scheme
Warning Area Coordinates (O)

The table gives a high-level description of the warning message content. The format of the warning message is described in 3GPP TS 36.331 [36].

2 General description

To permit mobiles to selectively display only those CBS messages required by the MS/UE user, CBS messages are assigned a message class which categorises the type of information that they contain and the language (Data Coding Scheme) in which the CBS message has been compiled. Through the use of appropriate MMI, the user is then able to ignore message types that he does not wish to receive, e.g. advertising information or messages in an unfamiliar language.



What does a CBS message look like?

The basic structure for a single message page[12] is as shown on the following page:

Octet Number (1 octet = 8 Bits)	Field
5	Data Coding Scheme If the message is not set to immediate display, this parameter tells the mobile handset how to display the message and which alphabet/language to use when interpreting the message. Through the use of an interface on the handset the user is able to ignore messages in an unfamiliar language. However, some warning messages may be transmitted in mandatory languages that are forcibly displayed.

compare said at least one language identifier of each message with at least one identifier of a user's preferred language chosen by a user of the mobile terminal and stored in the hardware memory of the mobile terminal identifying the language used in the mobile terminal;

Using the mobile device, a user can set a preferred language for displaying the messages in that language. The set language preference is stored in the SIM of the mobile device. The revived messages are compared with the set language preference stored in the SIM.

> 9.4.3.2.3 Data Coding Scheme
>
> This parameter identifies the alphabet/coding and the language applied to the warning message as defined in 3GPP TS 23.038 [3]. The contents of the parameter are specified in subclause 9.4.2.2.4 with respect to its structure and possible value range.

> 9.4.2.2.4 Data Coding Scheme
>
> This parameter identifies the the alphabet/coding and the language applied to a CBS Message as defined in 3GPP TS 23.038 [3].
>
> When the USIM indicates one or more language preferences, the UE shall, by default, use the language(s) stored in the USIM (in the EF_{PL} file) to set any language filter mechanisms provided by the UE.
>
> Optionally, when allowed by language code processing specified below, the user can select the language(s) required by using an MMI, to determine whether a particular CBS message should be displayed.

select the message for which a match is found through said comparison; and
display the selected message;

Based on the set language preference, the messages are displayed in the preferred language.

> 9.4.2.2.4 Data Coding Scheme
>
> This parameter identifies the the alphabet/coding and the language applied to a CBS Message as defined in 3GPP TS 23.038 [3].
>
> When the USIM indicates one or more language preferences, the UE shall, by default, use the language(s) stored in the USIM (in the EF_{PL} file) to set any language filter mechanisms provided by the UE.
>
> Optionally, when allowed by language code processing specified below, the user can select the language(s) required by using an MMI, to determine whether a particular CBS message should be displayed.

> 2 General description
>
> To permit mobiles to selectively display only those CBS messages required by the MS/UE user, CBS messages are assigned a message class which categorises the type of information that they contain and the language (Data Coding Scheme) in which the CBS message has been compiled. Through the use of appropriate MMI, the user is then able to ignore message types that he does not wish to receive, e.g. advertising information or messages in an unfamiliar language.

wherein the mobile terminal is adapted to manage broadcast-type mobile communication in accordance with any one of the 3GPP (3rd Generation Partnership Project), UMTS (Universal Mobile Telecommunications System), GPRS (General Packet Radio Service), GSM (Global System or Mobile Communications) standards, wherein said Multilanguage messages are structured according to the System Information Block 10 and/or System Information Block 11 and/or System Information Block 12 types.

The mobile device operating in LTE network can receive and display cell broadcast messages. The messages can be structured according to the system information block 10, 11 or 12 types.

Mobile Network Public Warning Systems and the Rise of Cell-Broadcast

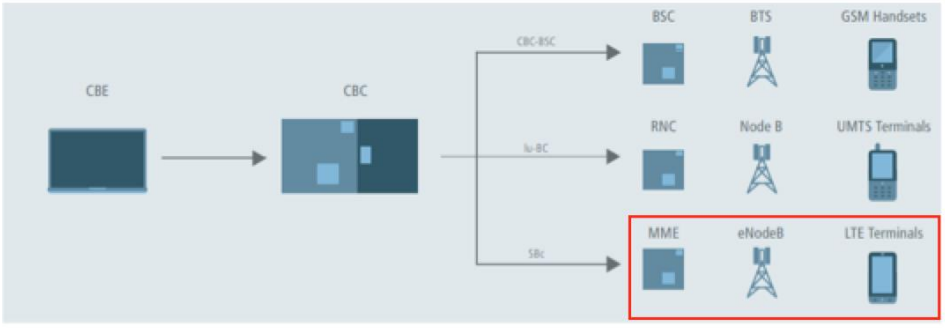
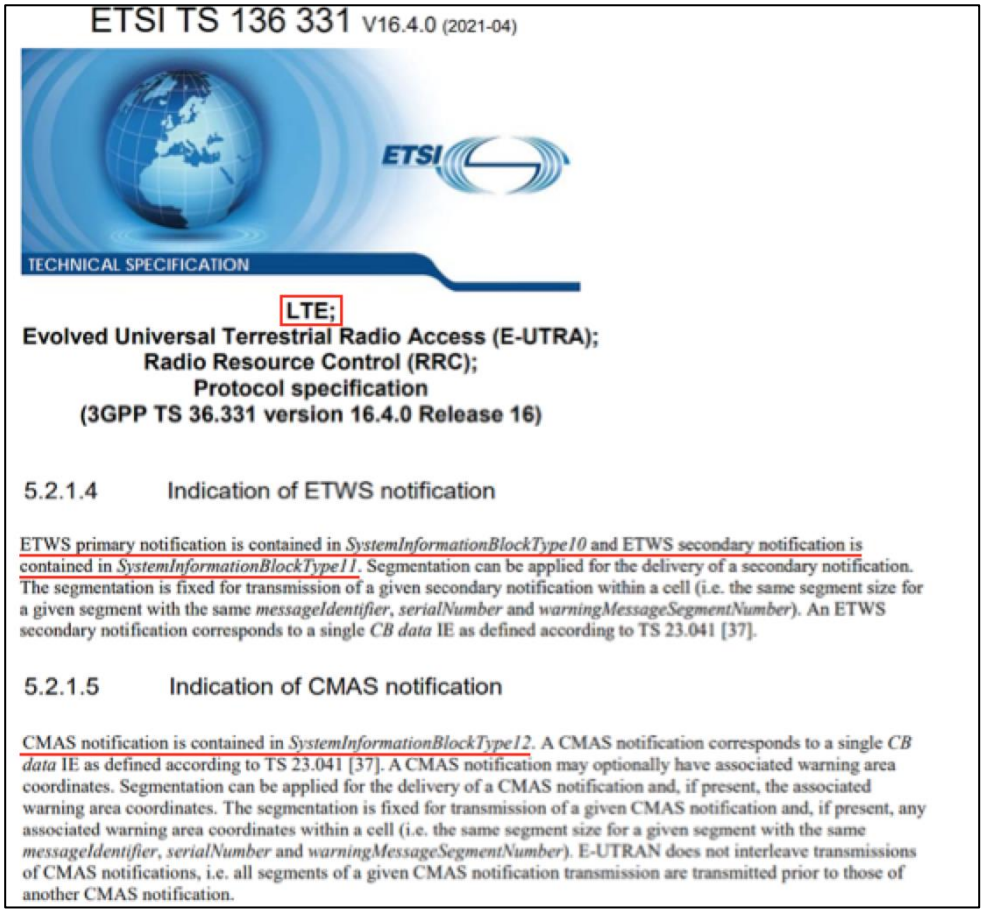


Fig 1: Basic CBS Architecture

The CBE is the messaging interface to the CBC. The CBE is a user interface used by the message creator to both compile the message and then specify the location (or locations) of message recipients. Once defined, the message is sent to the CBC, which maps the target area to the mobile network cells and then sends the cell broadcast message to the required radio access network(GSM, 3G, LTE), which will manage the message broadcast to the end user[15].



ETSI TS 136 331 V16.4.0 (2021-04)

TECHNICAL SPECIFICATION

LTE;
Evolved Universal Terrestrial Radio Access (E-UTRA);
Radio Resource Control (RRC);
Protocol specification
(3GPP TS 36.331 version 16.4.0 Release 16)

5.2.1.4 Indication of ETWS notification

ETWS primary notification is contained in *SystemInformationBlockType10* and ETWS secondary notification is contained in *SystemInformationBlockType11*. Segmentation can be applied for the delivery of a secondary notification. The segmentation is fixed for transmission of a given secondary notification within a cell (i.e. the same segment size for a given segment with the same *messageIdentifier*, *serialNumber* and *warningMessageSegmentNumber*). An ETWS secondary notification corresponds to a single *CB data* IE as defined according to TS 23.041 [37].

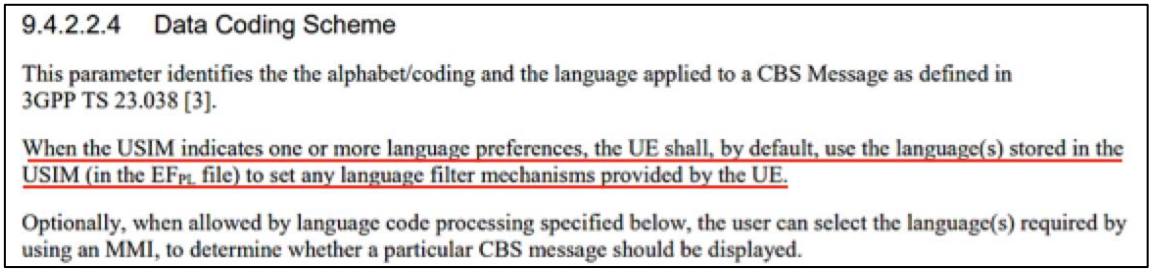
5.2.1.5 Indication of CMAS notification

CMAS notification is contained in *SystemInformationBlockType12*. A CMAS notification corresponds to a single *CB data* IE as defined according to TS 23.041 [37]. A CMAS notification may optionally have associated warning area coordinates. Segmentation can be applied for the delivery of a CMAS notification and, if present, the associated warning area coordinates. The segmentation is fixed for transmission of a given CMAS notification and, if present, any associated warning area coordinates within a cell (i.e. the same segment size for a given segment with the same *messageIdentifier*, *serialNumber* and *warningMessageSegmentNumber*). E-UTRAN does not interleave transmissions of CMAS notifications, i.e. all segments of a given CMAS notification transmission are transmitted prior to those of another CMAS notification.

26. Regarding claim 10:

The mobile terminal according to claim 8, wherein said hardware memory area of the mobile terminal comprises a Subscription Identity Module of the mobile terminal or any other hardware memory area of the mobile terminal.

For example, but not by way of limitation, the Galaxy S22 includes a SIM that stores a language preference of the user.



9.4.2.2.4 Data Coding Scheme

This parameter identifies the the alphabet/coding and the language applied to a CBS Message as defined in 3GPP TS 23.038 [3].

When the USIM indicates one or more language preferences, the UE shall, by default, use the language(s) stored in the USIM (in the EF_{PL} file) to set any language filter mechanisms provided by the UE.

Optionally, when allowed by language code processing specified below, the user can select the language(s) required by using an MMI, to determine whether a particular CBS message should be displayed.

27. Emergent Mobile has been damaged by the direct infringement of Samsung and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

COUNT II - Infringement of United States Patent No. 9,097,530

28. Plaintiff hereby realleges paragraphs 1 through 26 as though fully set forth herein.

29. Samsung directly and/or through its subsidiaries, affiliates, agents, and/or business partners, have in the past and continue to directly infringe at least claims 1, 2, 5, 6, 8, 15, 17, 18, and 20 of the '530 Patent pursuant to 35 U.S.C. § 271(a) by making, using, selling, or offering to sell, and/or importing in the United States (collectively, the "'530 Accused Products.").

30. Samsung products that infringe one or more claims of the '530 patent include, but are not limited to, the Galaxy Fold smartphone, and any other Android smartphones supporting Google ARCore.

31. With regards to claim 1:

A personal navigation device for ensuring continuity of service in an event of insufficient reception of GNSS satellite signals, the device comprising:

The Samsung Galaxy Fold has pre-installed Google Maps, and it supports Google ARCore. Google Maps' Live View feature enables a user to pinpoint the phone's location where GPS signal is weak or unavailable such as in indoor and in urban areas having tall buildings by using Google ARCore's motion tracking technology or localization technique to determine a device's location. The localization technique uses visual inputs from the phone's camera and

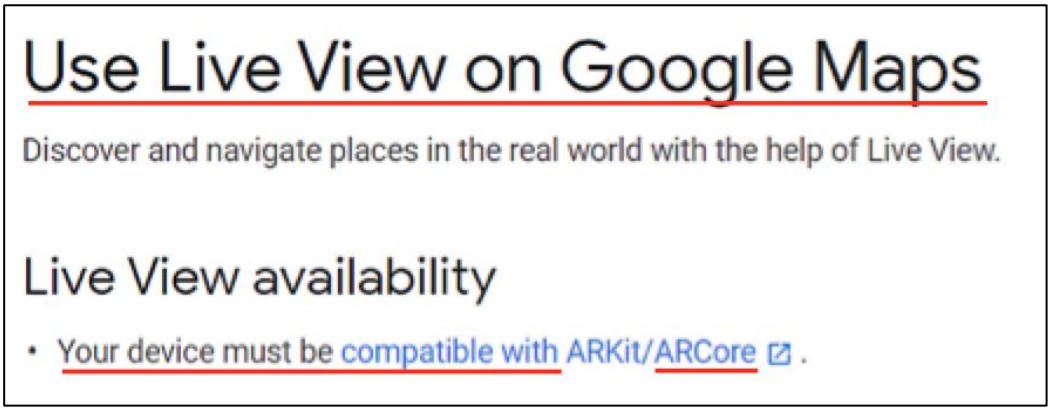
combines them with readings from the phone's inertial sensors to determine the phone's location.

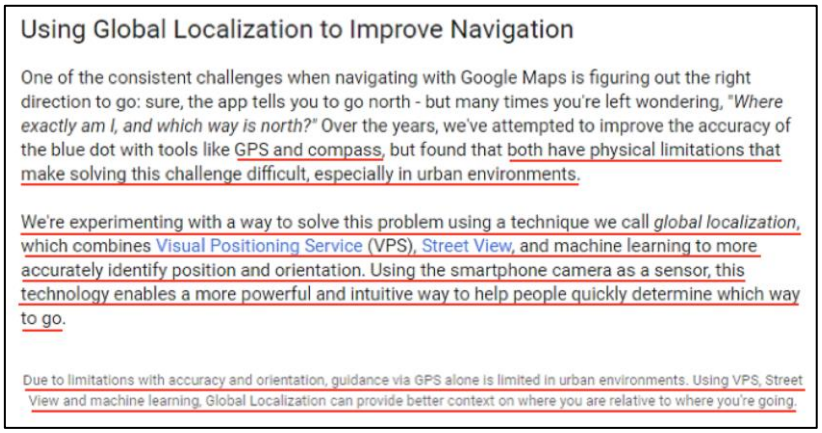
Samsung	Galaxy Fold	Supports Depth API
Samsung	Galaxy Z Fold2 5G	Supports Depth API

See https://developers.google.com/ar/devices

Maps

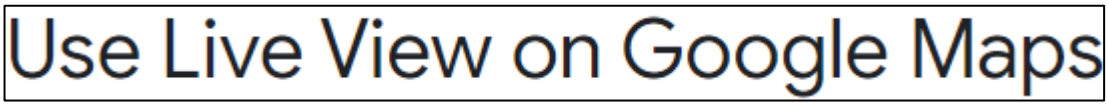
Find your location or the location of a place on the map. View geographical information.

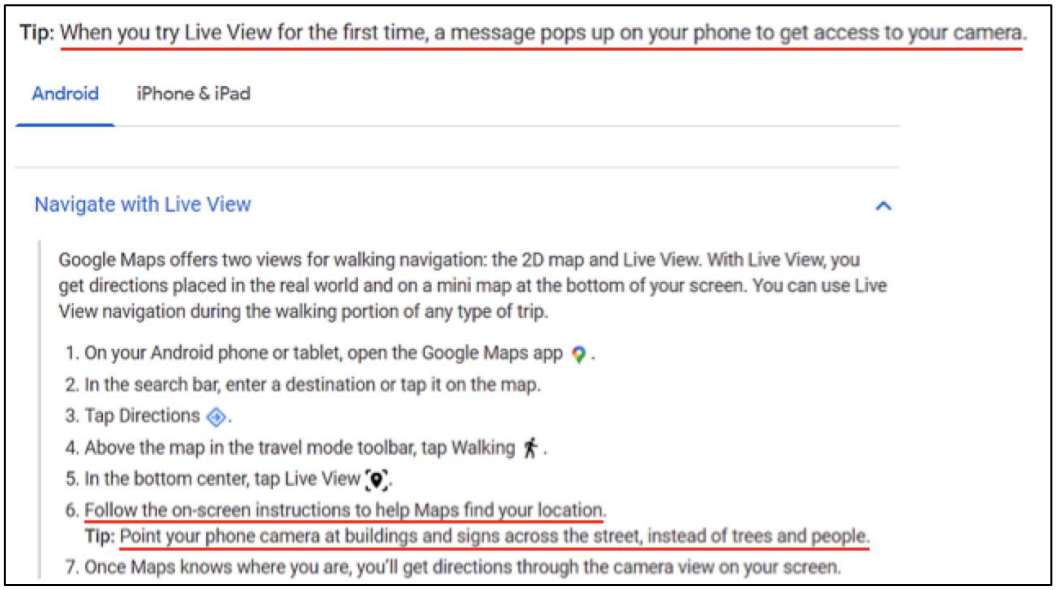




data input means for receiving first data from a user relating to a position of the personal navigation device; and

Defendant's Galaxy Fold smartphone includes a rear camera (data input means). While using Live View Feature, a user needs to grant camera access to Live View and Live View asks the user to point the camera at buildings and signs so that Live View can identify current position of the phone using images captures by the camera (first data).





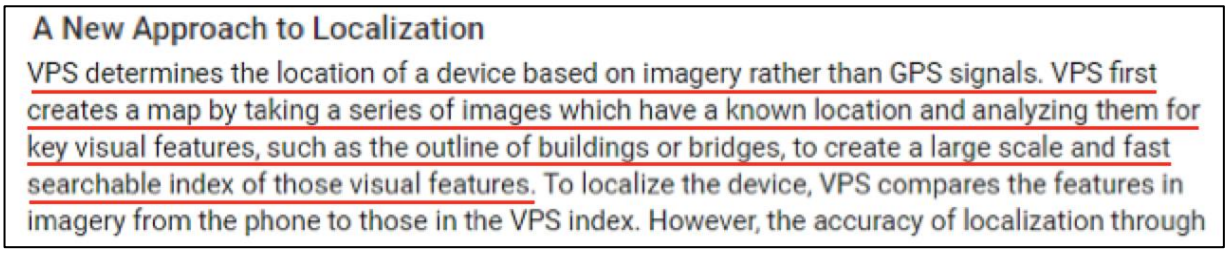
Tip: When you try Live View for the first time, a message pops up on your phone to get access to your camera.

Android iPhone & iPad

Navigate with Live View

Google Maps offers two views for walking navigation: the 2D map and Live View. With Live View, you get directions placed in the real world and on a mini map at the bottom of your screen. You can use Live View navigation during the walking portion of any type of trip.

1. On your Android phone or tablet, open the Google Maps app .
2. In the search bar, enter a destination or tap it on the map.
3. Tap Directions .
4. Above the map in the travel mode toolbar, tap Walking .
5. In the bottom center, tap Live View .
6. Follow the on-screen instructions to help Maps find your location.
   Tip: Point your phone camera at buildings and signs across the street, instead of trees and people.
7. Once Maps knows where you are, you'll get directions through the camera view on your screen.

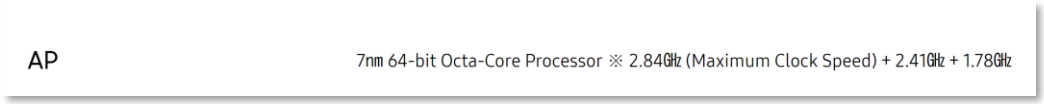


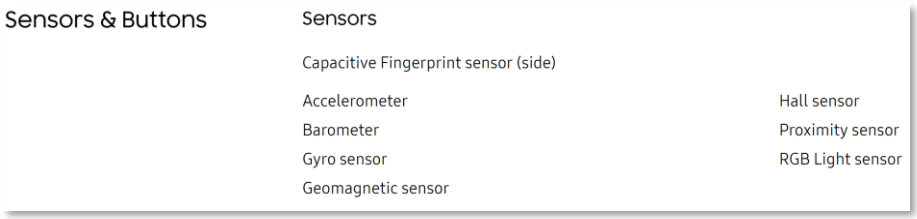
A New Approach to Localization

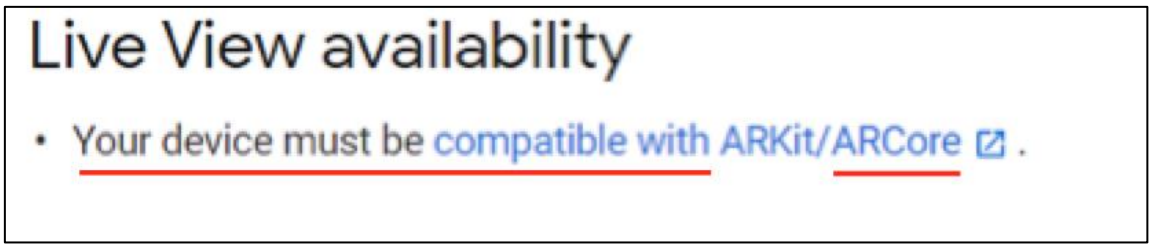
VPS determines the location of a device based on imagery rather than GPS signals. VPS first creates a map by taking a series of images which have a known location and analyzing them for key visual features, such as the outline of buildings or bridges, to create a large scale and fast searchable index of those visual features. To localize the device, VPS compares the features in imagery from the phone to those in the VPS index. However, the accuracy of localization through

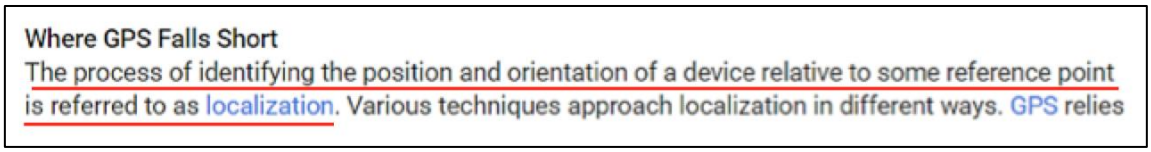
a microprocessor connected to the data input means and associated with localization tools that generate second data related to the position of the personal navigation device,

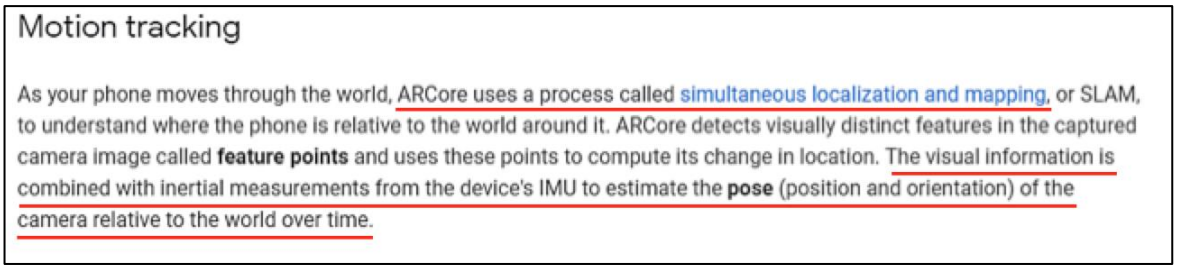
The Samsung Galaxy Fold has a Qualcomm Snapdragon 855 processor, which is connected to the camera and inertial measurement units (IMU) sensors such as Accelerometer/barometer/Gyro Sensor/Geomagnetic sensor (localization tools). Live View uses the Google ARCore's localization technology in which a phone position and orientation is determined using input from the IMU sensors (second data).





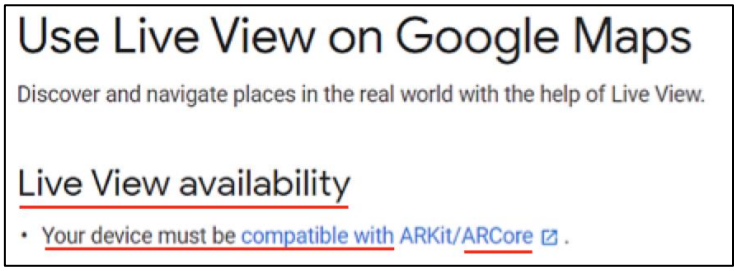






wherein the microprocessor uses the first data and the second data to calculate the position of the personal navigation device without using GNSS satellite signals.

The Samsung Galaxy Fold smartphone's processor combines visual information taken from the camera and the input data from the IMU sensors to detect accurate position of the phone without using GPS signals.

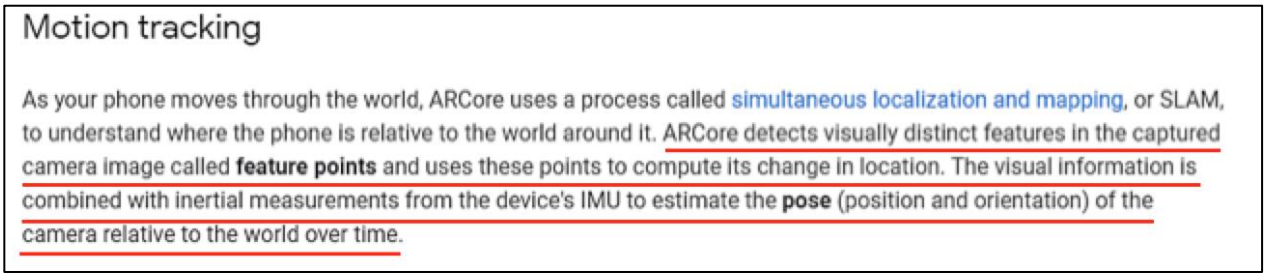


Use Live View on Google Maps

Discover and navigate places in the real world with the help of Live View.

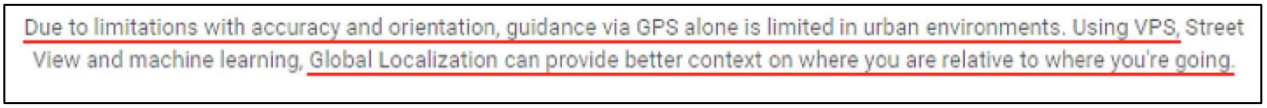
Live View availability

- Your device must be compatible with ARKit/ARCore .

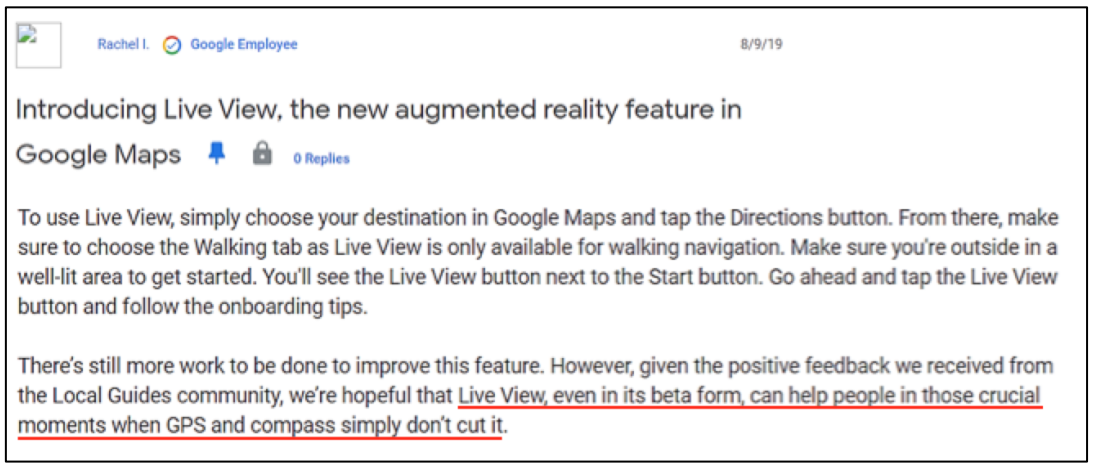


Motion tracking

As your phone moves through the world, ARCore uses a process called simultaneous localization and mapping, or SLAM, to understand where the phone is relative to the world around it. ARCore detects visually distinct features in the captured camera image called **feature points** and uses these points to compute its change in location. The visual information is combined with inertial measurements from the device's IMU to estimate the **pose** (position and orientation) of the camera relative to the world over time.



Due to limitations with accuracy and orientation, guidance via GPS alone is limited in urban environments. Using VPS, Street View and machine learning, Global Localization can provide better context on where you are relative to where you're going.



Rachel I. Google Employee 8/9/19

Introducing Live View, the new augmented reality feature in Google Maps 0 Replies

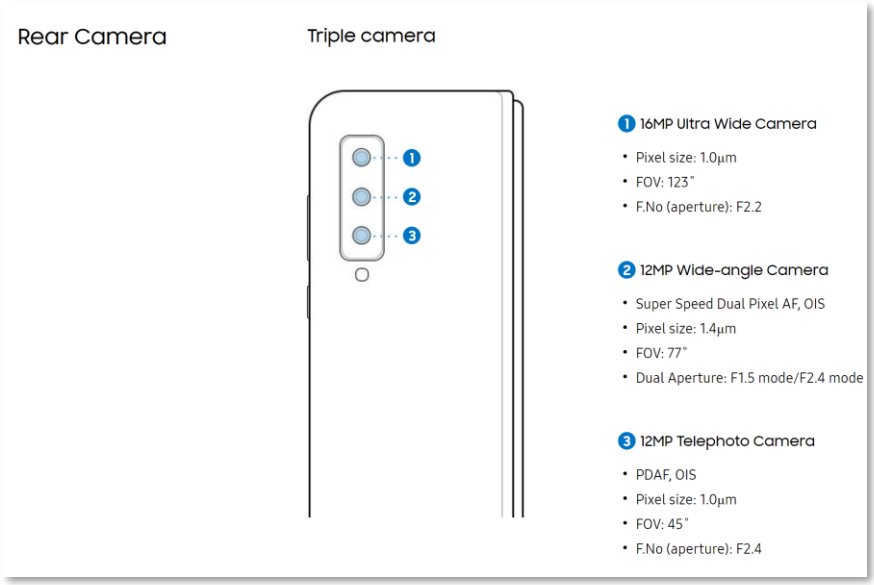
To use Live View, simply choose your destination in Google Maps and tap the Directions button. From there, make sure to choose the Walking tab as Live View is only available for walking navigation. Make sure you're outside in a well-lit area to get started. You'll see the Live View button next to the Start button. Go ahead and tap the Live View button and follow the onboarding tips.

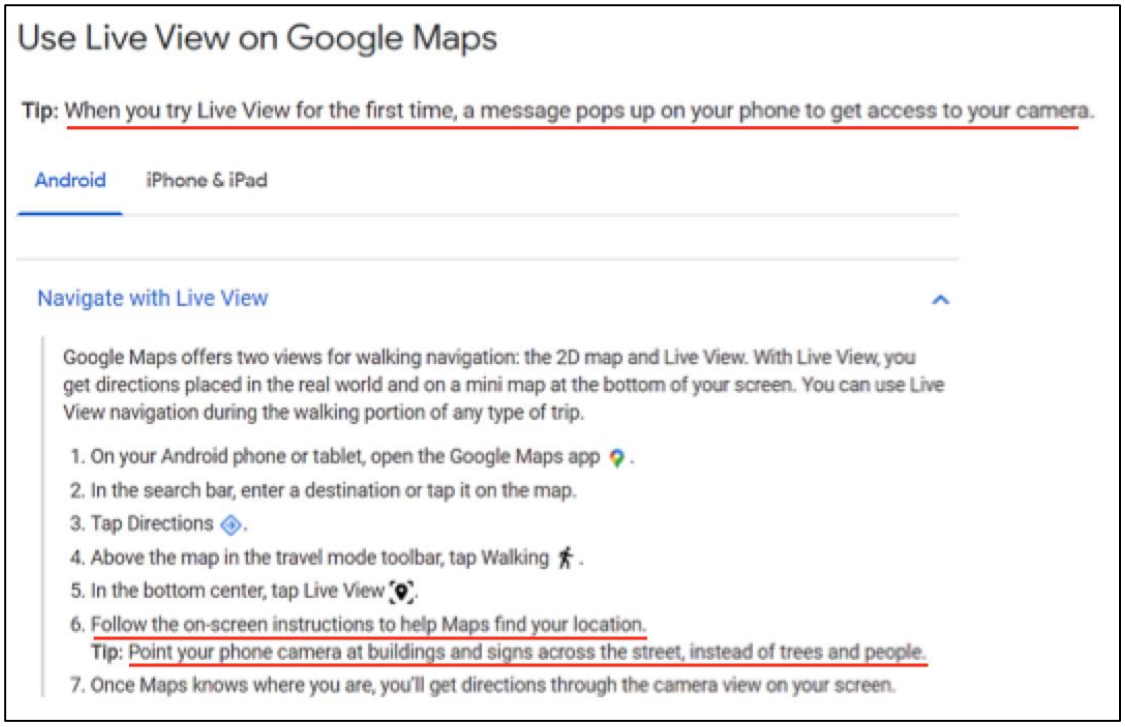
There's still more work to be done to improve this feature. However, given the positive feedback we received from the Local Guides community, we're hopeful that Live View, even in its beta form, can help people in those crucial moments when GPS and compass simply don't cut it.

32. Regarding claim 2:

The personal navigation device according to claim 1, wherein the data input means receives the first data from the user in an interactive manner by using information and commands made available by said portable navigation device to the user

The Samsung Galaxy Fold smartphone includes a rear camera ("data input means"). While using Live View feature, user needs to grant camera access to Live View and Live View asks the user to point the camera at buildings and sings ("information and commands") so that Live View can identify current position of the phone using images captured by the camera.

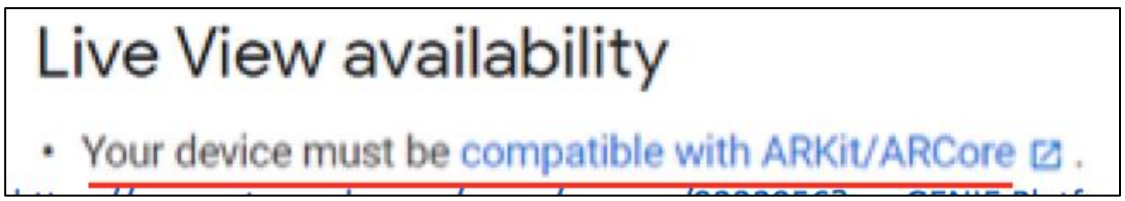


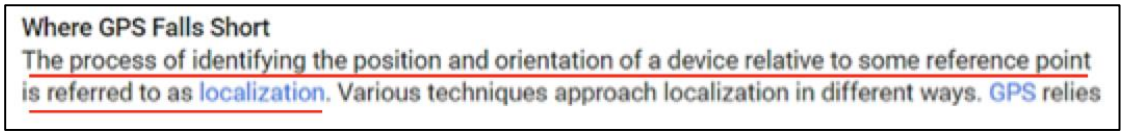


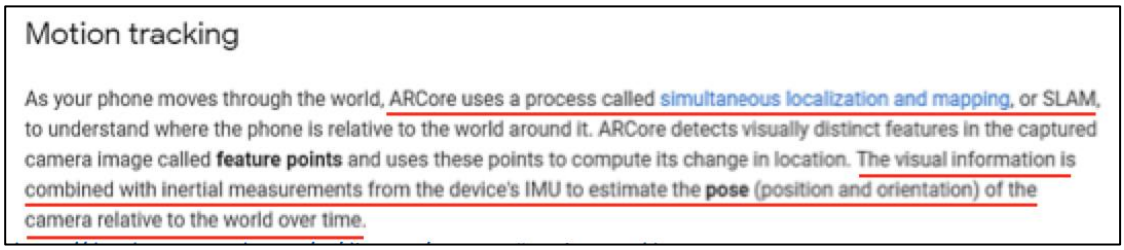
33. Regarding claim 5:

The personal navigation device according to claim 1, wherein said localization tools comprise an inertial system which uses said first data as an initial position to calculate subsequent instantaneous positions of said personal navigation device.

The Samsung Galaxy Fold smartphone has inertial measurement units (IMU) sensors such as Accelerometer/barometer/Gyro Sensor/Geomagnetic sensor ("localization tools"). Live View uses the Google ARCore's localization technology, which utilizes camera input to identify initial position, and subsequent position of the phone is determined using inputs from the IMU sensors.




Where GPS Falls Short
The process of identifying the position and orientation of a device relative to some reference point is referred to as localization. Various techniques approach localization in different ways. GPS relies


Motion tracking

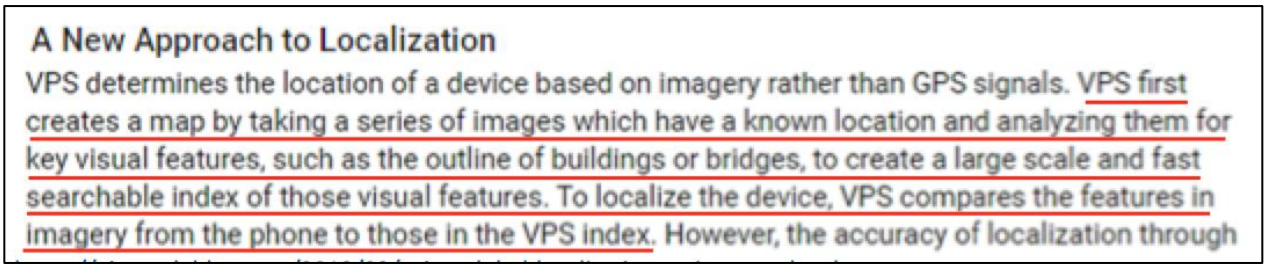
As your phone moves through the world, ARCore uses a process called simultaneous localization and mapping, or SLAM, to understand where the phone is relative to the world around it. ARCore detects visually distinct features in the captured camera image called **feature points** and uses these points to compute its change in location. The visual information is combined with inertial measurements from the device's IMU to estimate the **pose** (position and orientation) of the camera relative to the world over time.

34. Regarding claim 6:

The personal navigation device according to claim 1, further comprising a memory, wherein said first data comprise at least one of the following items:

an address of a place which is a starting point or a destination point of a route previously stored in the memory of the device; a point of interest stored in the memory of the device; a position recently obtained by the device through GNSS satellite signals; a geographic point stored in the memory of the device and previously selected by the user; a geographic place or address interactively selectable by the user based on a map stored in the memory of the device; a point on the map which can be displayed on a display of the device and which is selectable by the user.

The Samsung Galaxy Fold has 12GB RAM with 512GB of storage space. Live View uses visual positioning service to determine a user's current location and shows points of interest present near the determined location which are selectable by the user ("a point on the map which can be displayed on a display of the device, and which is selectable by the user.").

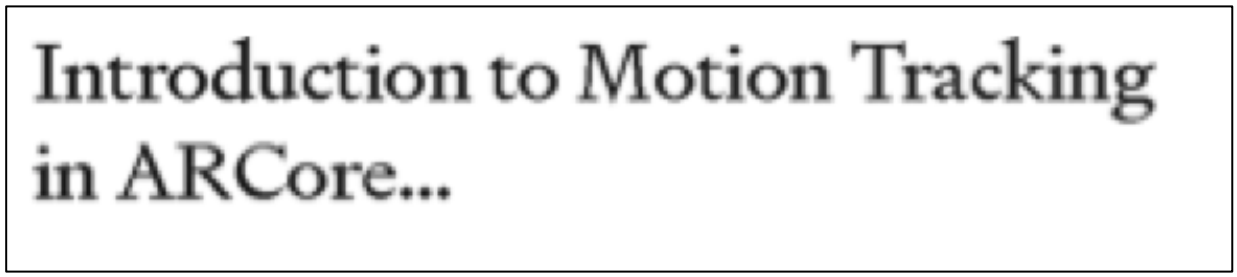

A New Approach to Localization
VPS determines the location of a device based on imagery rather than GPS signals. VPS first creates a map by taking a series of images which have a known location and analyzing them for key visual features, such as the outline of buildings or bridges, to create a large scale and fast searchable index of those visual features. To localize the device, VPS compares the features in imagery from the phone to those in the VPS index. However, the accuracy of localization through

35. Regarding claim 8:

The personal navigation device according to claim 1, wherein said second data comprise at least one of the following items:

a direction of the terrestrial magnetic field in the current position; an elevation of the current position from sea level; a direction and an intensity of an instantaneous speed of the device or of a vehicle moving at the same speed; a space travelled by the device or by a vehicle which has travelled the same space as the device.

The Samsung Galaxy Fold has inertial measurement units (IMU) sensors such as Accelerometer/barometer/Gyro Sensor/Geomagnetic sensor ("localization tools"). The geomagnetic sensor is used to determine the phone's orientation related to Earth's magnetic field and the accelerometer and gyroscope are used to determine orientation and acceleration/velocity of the phone.



Hardware that enables Motion Tracking

Accelerometer: Measures acceleration, which is speed divided by time. Simply put, it's the measure of change in velocity. Acceleration forces can be static/continuous — like gravity — or dynamic, such as movement or vibrations.

Gyroscope: Measures and/or maintains orientation and angular velocity. When you change the rotation of your phone while using an AR experience, the gyroscope measures that rotation and ARCore ensures that the digital assets respond correctly.

Hardware that enables location-based AR

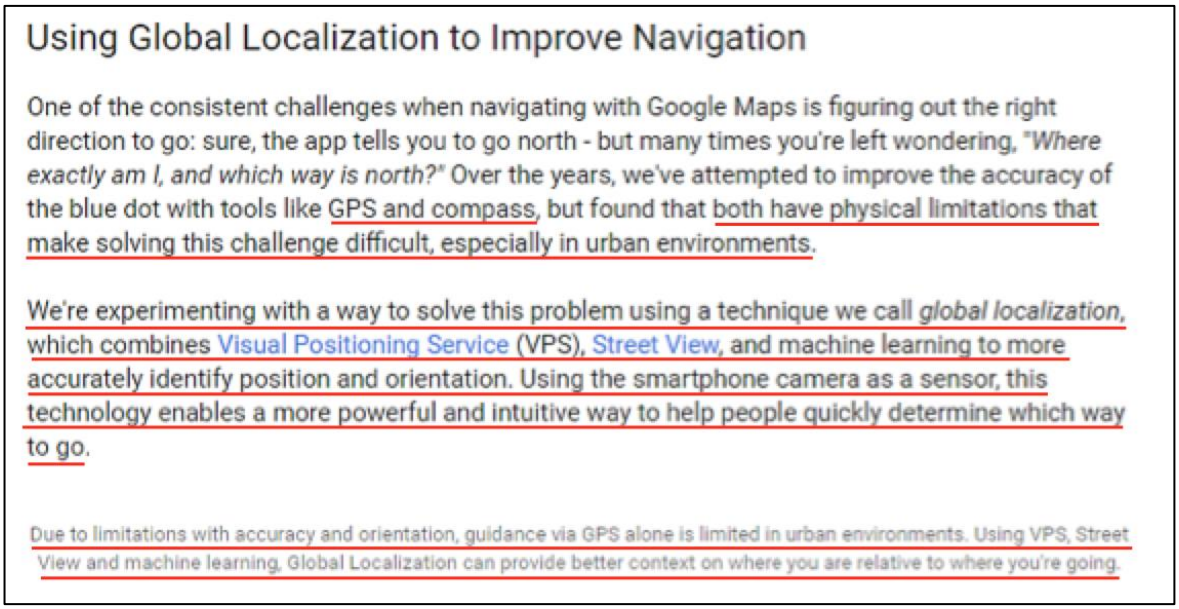
Magnetometer: Gives smartphones a simple orientation related to the Earth's magnetic field. Because of the magnetometer, your phone always knows which direction is North, allowing it to auto-rotate digital maps depending on your physical orientation. This device is key to location-based AR apps.

36. Regarding claim 15:

A method for ensuring continuity of service in a personal navigation device in an event of insufficient reception of GNSS satellite signals, the method comprising:

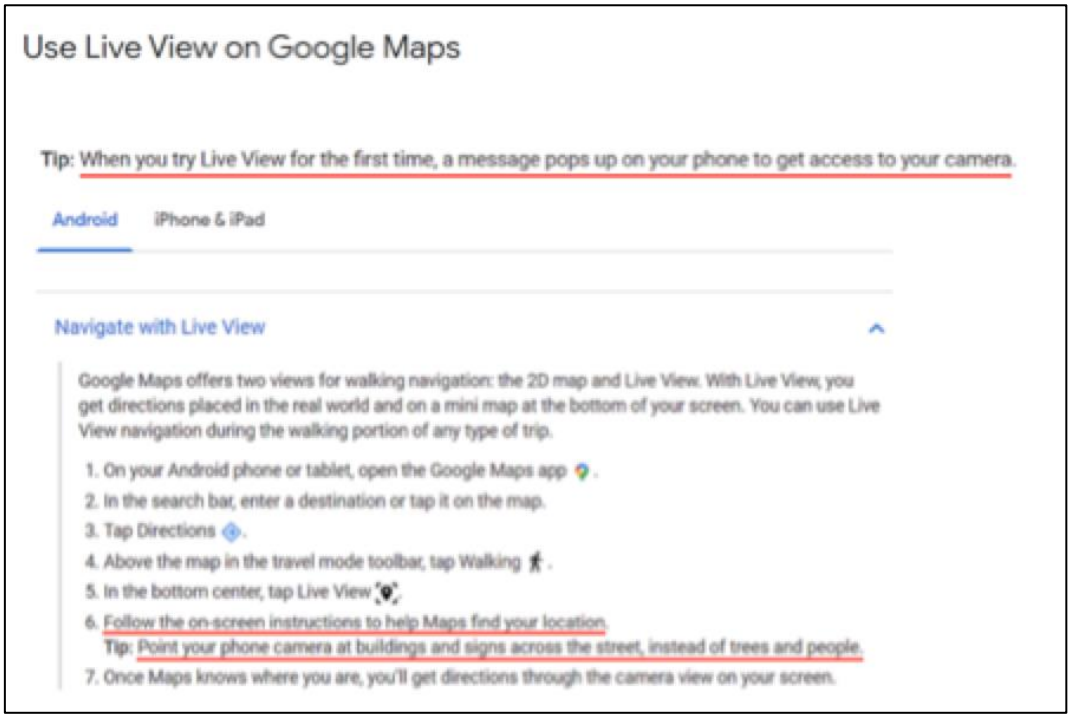
The Samsung Galaxy Fold has pre-installed Google Maps, and it supports Google ARCore. Google Maps' Live View feature enables a user to pinpoint the phone's location where GPS signal is weak or unavailable such as in indoor or in urban areas having tall buildings by using Google ARCore's motion tracking technology or localization technique to determine a device's location. The localization technique uses visual inputs from the phone's camera and

combines them with readings from the phone's inertial sensors to determine the phone's location.



acquiring a position of the personal navigation device manually from first data received through data input means for receiving the first data;

The Samsung Galaxy Fold includes a rear camera ("data input means"). While using Live View feature, a user needs to grant camera access to Live View and Live View asks the user to point the camera at buildings and signs so that Live View can identify current position of the phone using images captures by the camera ("first data").



Use Live View on Google Maps

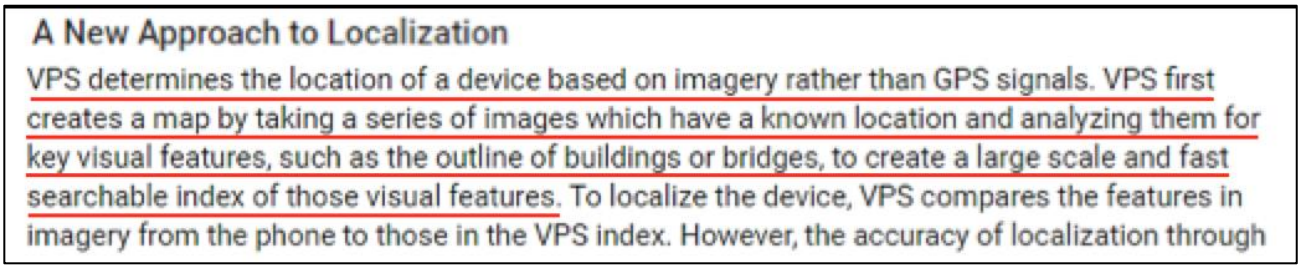
Tip: When you try Live View for the first time, a message pops up on your phone to get access to your camera.

Android iPhone & iPad

Navigate with Live View

Google Maps offers two views for walking navigation: the 2D map and Live View. With Live View, you get directions placed in the real world and on a mini map at the bottom of your screen. You can use Live View navigation during the walking portion of any type of trip.

1. On your Android phone or tablet, open the Google Maps app.
2. In the search bar, enter a destination or tap it on the map.
3. Tap Directions.
4. Above the map in the travel mode toolbar, tap Walking.
5. In the bottom center, tap Live View.
6. Follow the on-screen instructions to help Maps find your location.
   Tip: Point your phone camera at buildings and signs across the street, instead of trees and people.
7. Once Maps knows where you are, you'll get directions through the camera view on your screen.

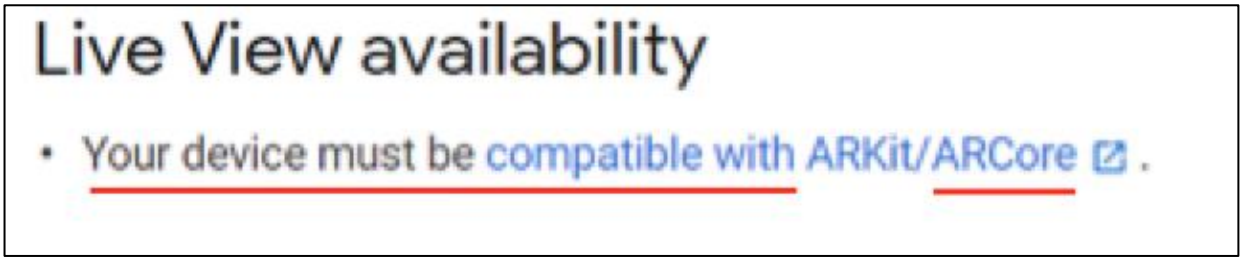


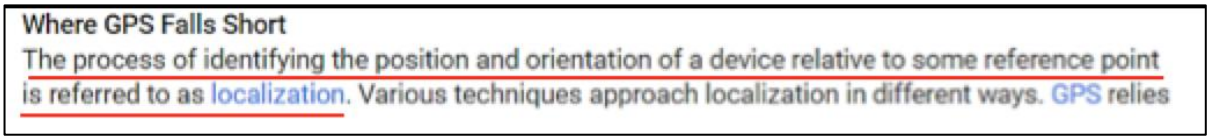
A New Approach to Localization

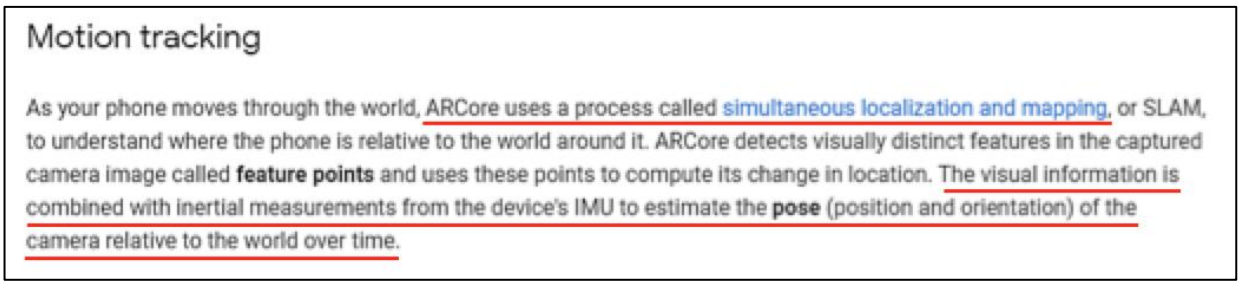
VPS determines the location of a device based on imagery rather than GPS signals. VPS first creates a map by taking a series of images which have a known location and analyzing them for key visual features, such as the outline of buildings or bridges, to create a large scale and fast searchable index of those visual features. To localize the device, VPS compares the features in imagery from the phone to those in the VPS index. However, the accuracy of localization through

acquiring second data from localization tools configured to generate the second data. wherein the second data relates to the position of the personal navigation device; and

The Samsung Galaxy Fold has a Qualcomm Snadragon 855 processor which is connected to the camera and inertial measurement units (IMU) sensors such as Accelerometer/barometer /Gyro Sensor/Geomagnetic ("localization tools"). Live View uses the Google ARCore's localization technology in which a phone position and orientation is determined using input from the IMU sensors ("second data").

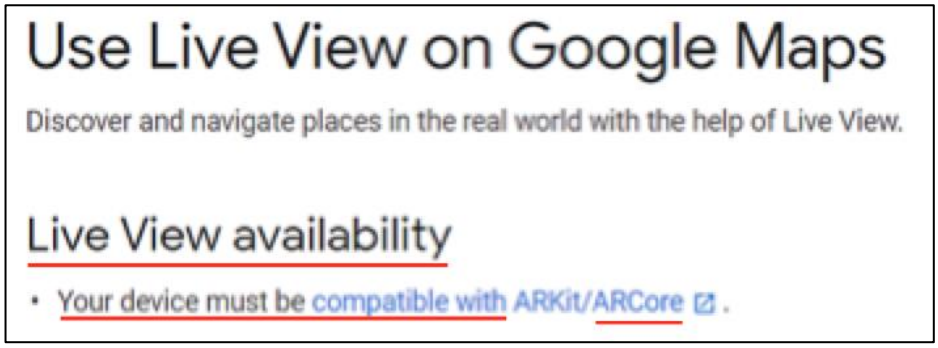


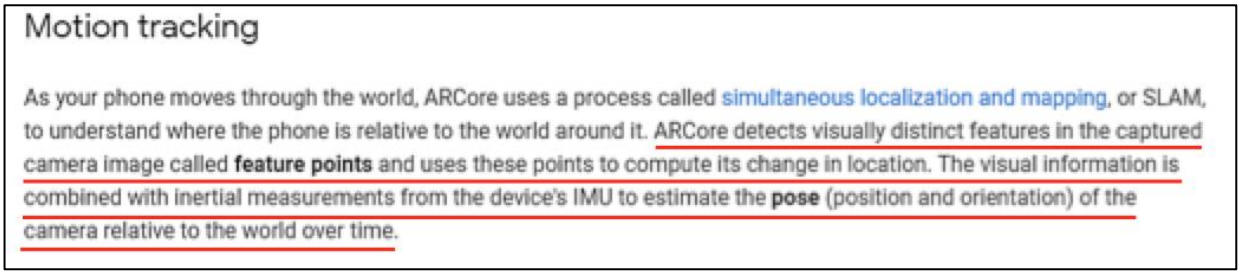




determining the position of the personal navigation device with a microprocessor that is connected to the data input means and the localization tools based on the first data and the second data and without using GNSS satellite signals.

The Defendant's processor combines visual information taken from the camera and the input data from the IMU sensors to detect accurate position of the phone without using GPS signals.





Motion tracking

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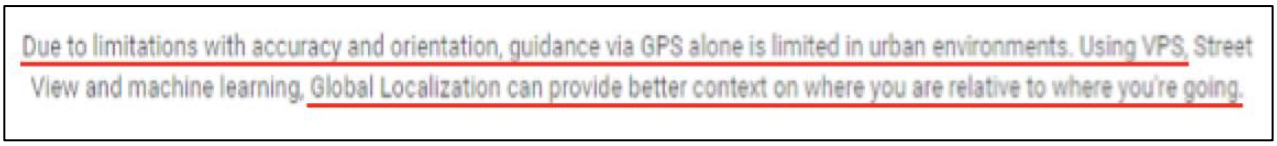
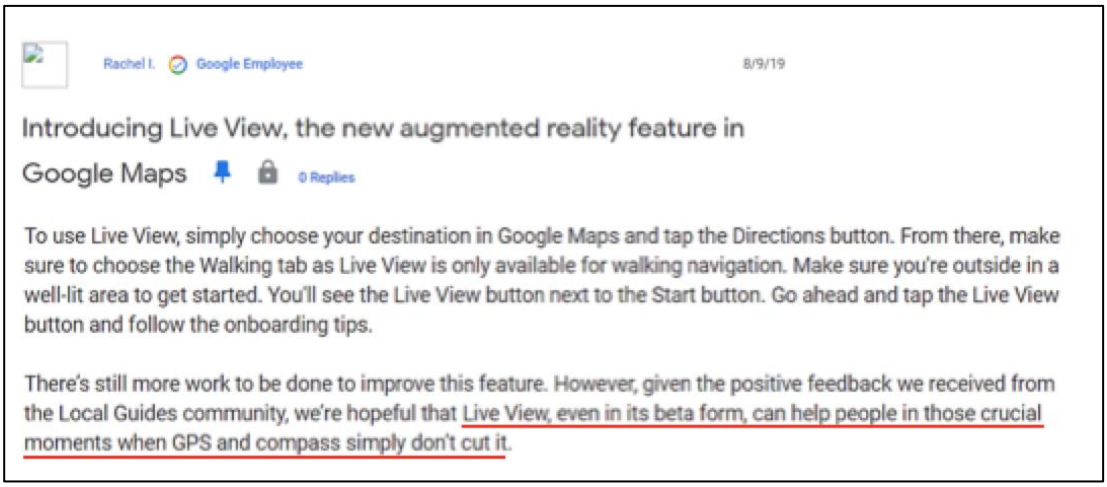


Due to limitations with accuracy and orientation, guidance via GPS alone is limited in urban environments. Using VPS, Street View and machine learning, Global Localization can provide better context on where you are relative to where you're going.



Rachel I. Google Employee 8/9/19

Introducing Live View, the new augmented reality feature in Google Maps 0 Replies

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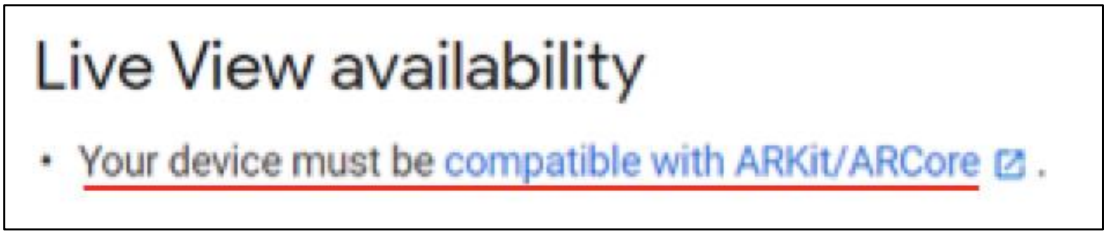
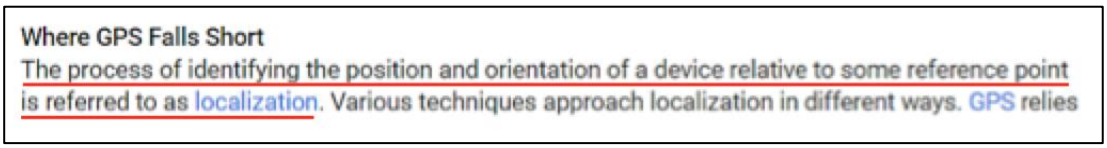
There's still more work to be done to improve this feature. However, given the positive feedback we received from the Local Guides community, we're hopeful that Live View, even in its beta form, can help people in those crucial moments when GPS and compass simply don't cut it.

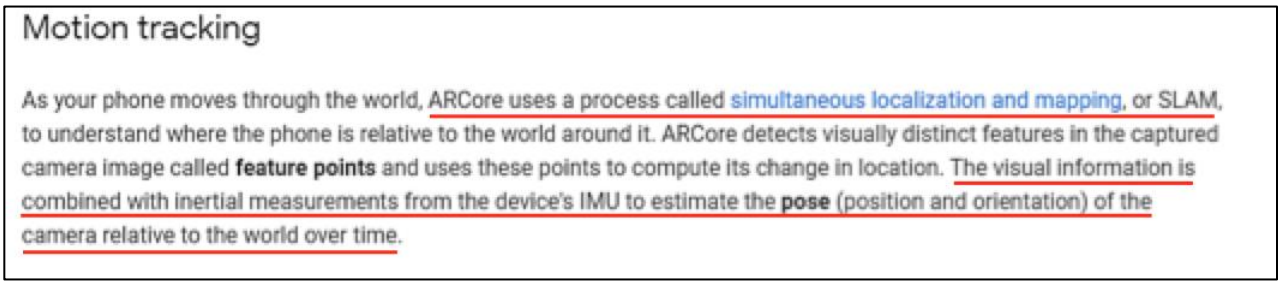
37. Regarding claim 17:

The method according to claim 15, further comprising the localization tools using an inertial system which uses said first data as an initial position to calculate subsequent positions of said personal navigation device.

The Samsung Galaxy Fold has inertial measurements units (IMU) sensors such as Accelerometer/barometer/Gyro Sensor/Geomagnetic sensor ("localization tools"). Live View uses the Google ARCore's localization technology, which utilizes camera input to identify initial position, and subsequent position of the phone is determined using inputs from the IMU sensors.



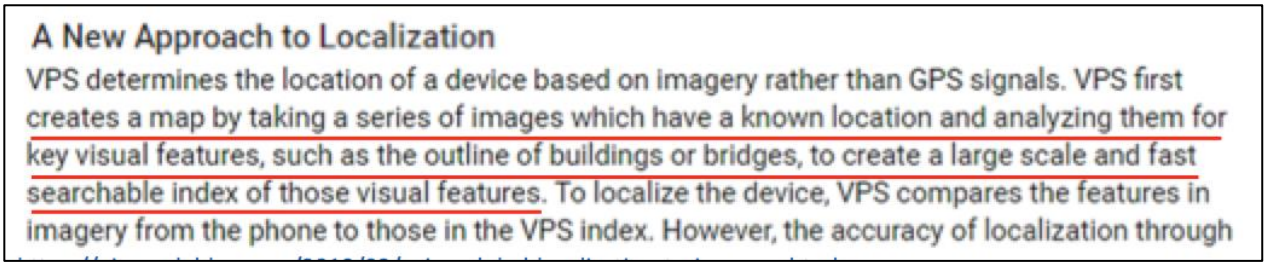




38. Regarding claim 18:

The method according to claim 15, wherein the personal navigation device includes a memory, further comprising a receiving at least one of the following as the first data into the data input means: an address of a place which is a starting point or a destination point of a route previously stored in the memory of the device; a point of interest stored in the memory of the device; a position recently obtained by the device through GNSS satellite signals; a geographic point stored in the memory of the device and previously selected by the user; a geographic place or address interactively selectable by the user based on a map stored in the memory of the device; a point on the map which can be displayed on a display of the device and which is selectable by the user.

The Samsung Galaxy Fold has 12GB RAM with 512GB internal storage. Live View uses visual positioning service to determine a user's current location and shows points of interest present near the determined location which are selectable by the user ("a point on the map which can be displayed on a display of the device, and which is selectable by the user.").



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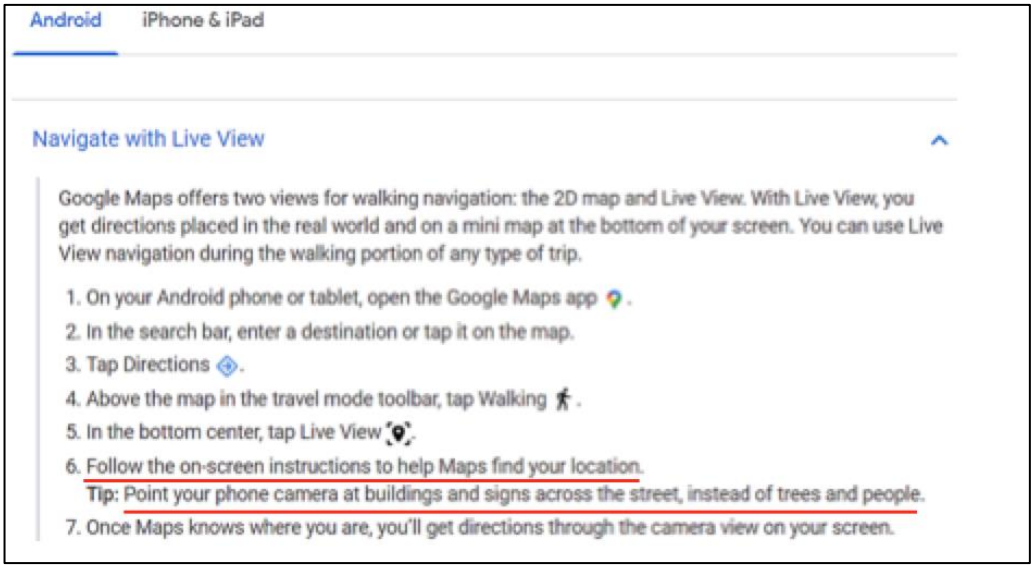
39. Regarding claim 20:

The method according to claim 15, further comprising receiving the first data in an interactive manner using commands and information that are presented on a display of the personal navigation device.

The Samsung Galaxy Fold includes a rear camera (data input means). While using Live View feature, a user needs to grant camera access to Live View and Live View asks the user to point the camera at buildings and signs ("commands and information") so that Live View can identify current position of the phone using images captures by the camera.

Use Live View on Google Maps

Tip: When you try Live View for the first time, a message pops up on your phone to get access to your camera.



Android iPhone & iPad

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1. On your Android phone or tablet, open the Google Maps app.
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4. Above the map in the travel mode toolbar, tap Walking.
5. In the bottom center, tap Live View.
6. Follow the on-screen instructions to help Maps find your location.
   Tip: Point your phone camera at buildings and signs across the street, instead of trees and people.
7. Once Maps knows where you are, you'll get directions through the camera view on your screen.

47. Emergent Mobile has been damaged by the direct infringement of Samsung and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

JURY TRIAL DEMANDED

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Emergent Mobile hereby requests a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Emergent Mobile respectfully requests that the Court enter judgment in its favor and against Samsung as follows:

a. finding that Samsung directly infringes one or more claims of each of the patents-in-suit;

b. awarding Emergent Mobile damages under 35 U.S.C. § 284, or otherwise permitted by law, including supplemental damages for any continued post-verdict infringement;

c. awarding Emergent Mobile pre-judgment and post-judgment interest on the damages award and costs;

d. awarding cost of this action (including all disbursements) and attorney fees pursuant to 35 U.S.C. § 285, or as otherwise permitted by the law; and

e. awarding such other costs and further relief that the Court determines to be just and equitable.

Dated: August 22, 2022

Respectfully submitted,

/s/ Stevenson Moore V ____

Neal Massand
Texas Bar No. 24039038
nmassand@nilawfirm.com
Stevenson Moore V
Texas Bar No. 24076573
smoore@nilawfirm.com
NI, WANG & MASSAND, PLLC
8140 Walnut Hill Lane, Suite 500
Dallas, TX 75231
Tel: (972) 331-4600
Fax: (972) 314-0900

Attorney for Plaintiff Emergent Mobile LLC

CERTIFICATE OF SERVICE

I hereby certify that on the 22nd day of August, 2022, I electronically filed the foregoing document with the clerk of the court for the U.S. District Court, Eastern District of Texas, Marshall Division, using the electronic case filing system of the court. The electronic case filing system sent a "Notice of Electronic Filing" to the attorneys of record who have consented in writing to accept this Notice as service of this document by electronic means.

/s/ Stevenson Moore V
Stevenson Moore V