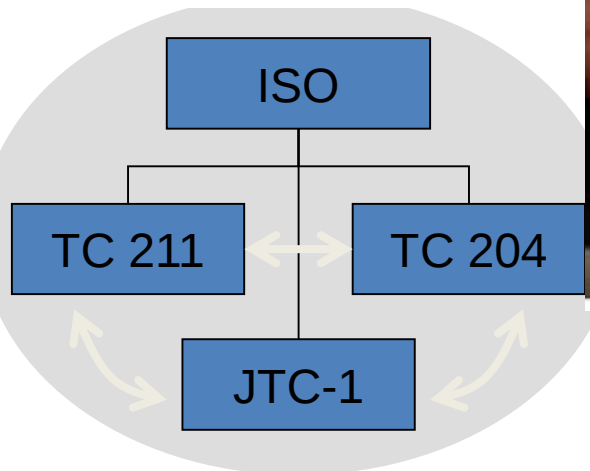
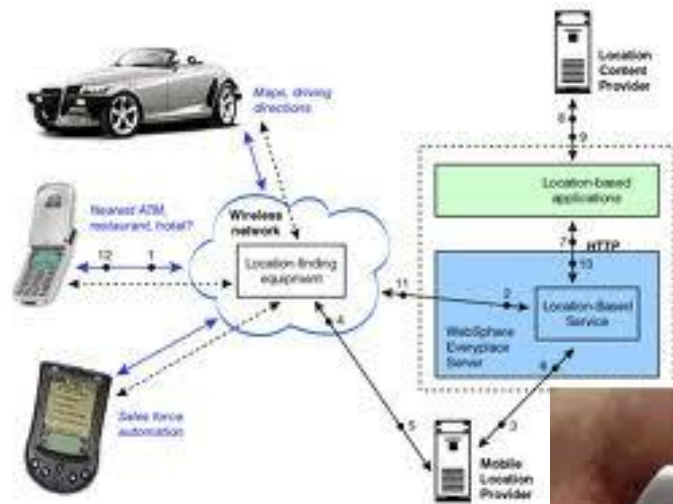


Serviços de Localização e Geoinformação



Geographic Information Modelling

- Geographic Data Models
- Levels of abstraction of geographic data
- OMT-G Data Model (UML)
- Class Diagram
- Transformation diagram
- Presentation Diagram
- Spatial integrity constraints
- Mapping to Deployment Schemas

Reference: Borges_OMTG.pdf

Normative Aspects of Geographic Information

“Standards”

- ☐ Characteristics of the Standards
- ☐ A ISO
- ☐ ISO/TC211
- ☐ Reference Model
- ☐ Road-Map of ISO19100
- ☐ UML Elements for GI
- ☐ Terminology
- ☐ Positioning Services
- ☐ The Inspire directive
- ☐ Definition of Annex Themes and Scope
- ☐ Coordinate Reference Systems (CRS)

ISO Standards for Geographic Information. Wolfgang Kresse and Kian Fadaie. Springer, 2004.

The Information Society

- ☐ The Information Society
- ☐ The Digital City
- ☐ The New Mobility
- ☐ Technological Convergence
- ☐ The Internet and the Web
- ☐ The new information and communication technologies – Wireless networks
- ☐ Semantic Web
- ☐ New Information and Communication Technologies
- ☐ Wireless Mobile Telecommunications
- ☐ Other mobile wireless networks (WLAN, Bluetooth)
- ☐ Internet GIS and Wireless GIS

Location-Based Services and Geo-Information Engineering. Allan Brimicombe and Chao Li. Wiley-Blackwell, 2009

Positioning Systems

- ☐ Location-Based Services
- ☐ Mandates E911 and E112
- ☐ LBS Architecture
- ☐ Areas of application
- ☐ Size and Granularity
- ☐ User Location
- ☐ GNSS
- ☐ Indoor positioning
- ☐ Positioning technologies based on telecommunications networks
- ☐ Short-range positioning techniques
- ☐ Hybrid Systems

The context in the SLG

- ☐ The Context in LBS
- ☐ Space Research
- ☐ Geometric Data
- ☐ Topological Data
- ☐ Data Attributes
- ☐ Temporality of Data
- ☐ Communication in LBS
- ☐ Maps in LBS
- ☐ Normative Aspects
- ☐ Functional classification of LBS
- ☐ The LBS business

Assessment:

Written Exam	50 %
Presentation and discussion of the practical work:	50%

Practical work. The student must submit the report and practical work on paper (1 copy), along with the files containing the completed work. The deadline for submitting the practical work is December 14, 2026. The oral presentation and discussion of the practical work will be on December 15, 2026, at 9 am.

Project 1. Navigation on the FCUL campus

It is intended to provide geographic and alphanumeric information about the FCUL campus, including information regarding its infrastructure and pedagogical offer. The site should be intuitive and aimed at new University students (national or Erasmus). The information on the DCTE should be exhaustive (rooms, teachers, laboratories, etc.).

Tasks: Compilation of geographic and alphanumeric information of the University of Lisbon campus. Structuring of Information – Catalogue of Geographical Entities (according to ISO 19110) and UML class diagram. Constitution of a geographic information system of the FCUL Campus. Availability of Geographic Information on the Web. Configuration of mobile devices to access campus information.

Project 2. DashBoard or StoryBoard

Create a DashBoard or StoryBoard of the FCUL campus

Calendarização das aulas Teóricas

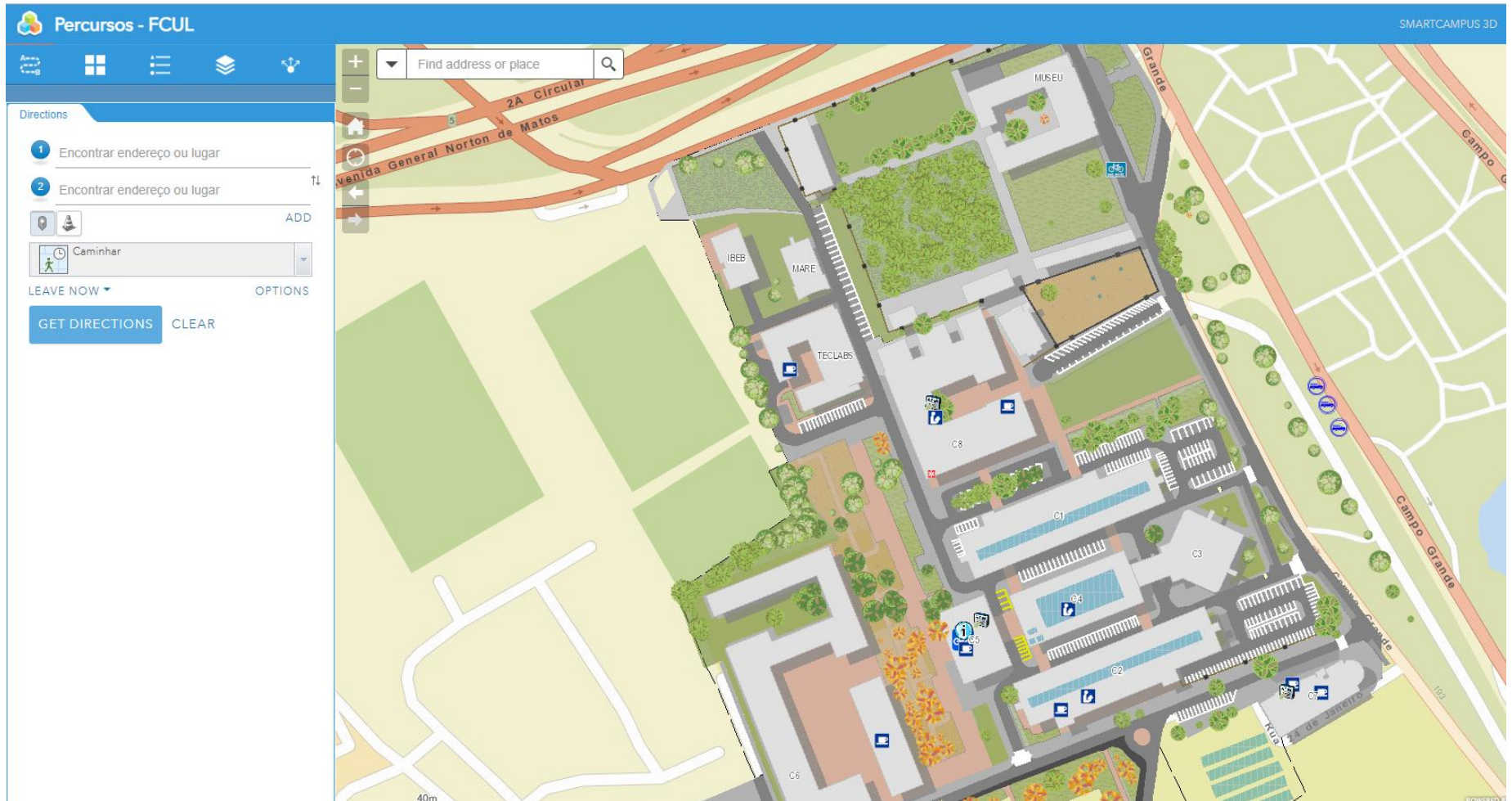
(Class scheduling)

#	Conteúdo	Data
Aula 1	Apresentação. Modelação de Dados GeoEspaciais	15 set.
Aula 2	Modelação de Dados GeoEspaciais	22 set.
Aula 3	Aspetos Normativos da GeoInformação	29 set.
Aula 4	Aspetos Normativos da GeoInformação (Inspire)	6 Out.
Aula 5	A sociedade da Informação (até internet)	13 Out.
Aula 6	A sociedade da Informação	20 Out.
Aula 7	LBS e Sistemas de Posicionamento	27 Out.
Aula 8	LBS e Sistemas de Posicionamento	3 Nov.
Aula 9	O contexto nos LBS	10 Nov.
Aula 10	Projectos de DashBoard e StoryBoard	17 Nov.
Aula 11	Projectos de DashBoard e StoryBoard	24 Nov.
Aula 12	Feriado	1 Dez.
Aula 13	Feriado	8 Dez.
Aula 14	Apresentação dos projectos	15 Dez.

Calendarização das aulas Práticas

(Class scheduling, practical)

#	Conteúdo	Data
Aula 1	Modelação da base de dados (exercícios)	15 set.
Aula 2	Modelação da base de dados em OMTG	22 set.
Aula 3	Criação e preenchimento da base de dados em ArcGis	29 set.
Aula 4	Criação e preenchimento da base de dados em ArcGis	6 Out.
Aula 5	Criar relações entre entidades	13 Out.
Aula 6	Redes	20 Out.
Aula 7	Redes + Geocoding	27 Out.
Aula 8	Criar um WebSIG (WebApp)	3 Nov.
Aula 9	Criar um WebSIG (WebApp)	10 Nov.
Aula 10	Criar um WebSIG (WebApp)	17 Nov.
Aula 11	ArcGIS Field Maps Verificação do funcionamento da aplicação	24 Nov.
Aula 12	Feriado	1 Dez.
Aula 13	Feriado	8 Dez.
Aula 14	Apresentação dos projectos DashBoard/Storyboard	15 Dez.



<http://www.arcgis.com/apps/webappviewer/index.html?id=11fd2c9f53a04a08bc95f2e823615036>

<http://fcuIDCTE.maps.arcgis.com/apps/webappviewer/index.html?id=ddf6c56898cf48f4938117dc46edb8ba>

Rafael

<http://ulisboa.maps.arcgis.com/apps/webappviewer/index.html?id=0af9743c28004b76b0885d98d8e62ad2>

Tiago

<http://ulisboa.maps.arcgis.com/apps/webappviewer/index.html?id=3063c0af8a704c3989c915c900cf513f>

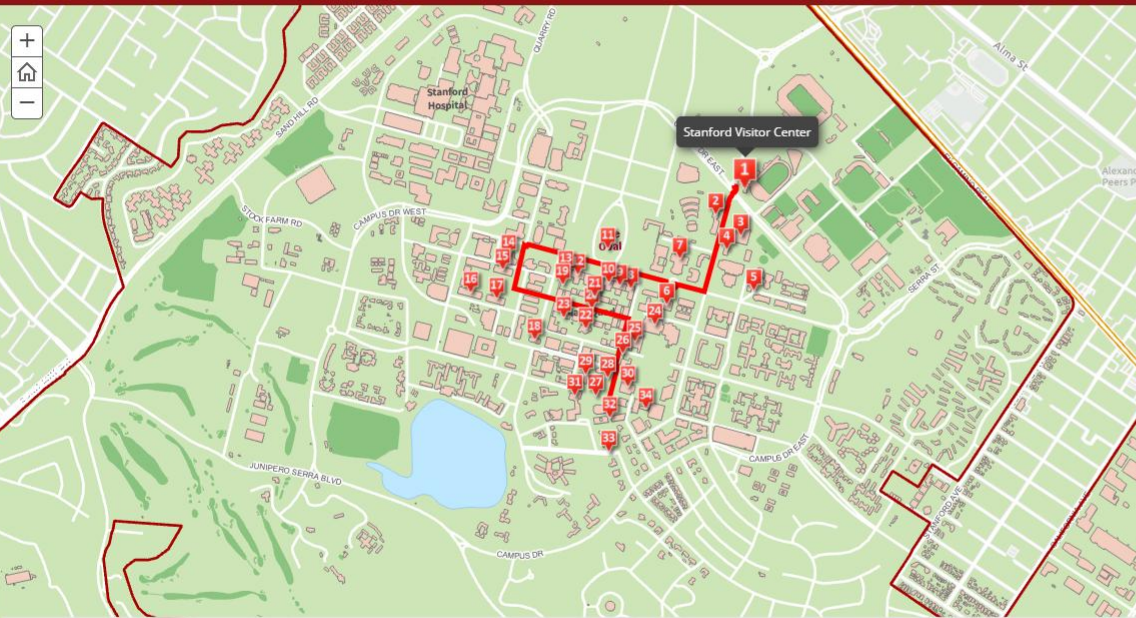
An Introduction to Story Maps

A Story Map    

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

Stanford University Campus Tour

Explore Stanford University on a self-guided tour



The map shows the Stanford University campus with various buildings and landmarks. A red line indicates the tour path, starting at the Stanford Visitor Center (1) and ending at Jordan Hall (12). The map includes labels for streets like Alma St, Stanford Hospital, and Campus Dr.



Stanford Visitor Center

Can't find a specific building? Want to know what's happening on campus on the night of your visit? At the Stanford Visitor Center, located at 295 Galvez Street, our staff can make your visit more informative and pleasurable. [More information](#)

Photo Credit: Linda A. Cicero



Stanford Visitor Center



Frances C. Arrillaga Alumni Center



Arrillaga Center for Sports & Recreation



Montag Hall



Knight Management Center



Hoover Tower



Memorial Hall and Memorial Auditorium



Lane History Corner



Wallenberg Hall



McClatchy Hall



The Oval and Palm Drive



Jordan Hall

Indoor Positioning and navigation



Indoor Positioning and navigation

- Pessoas
- Máquinas
- Robots



ArcGIS Indoors allows you to create a 2D or 3D digital indoor map of your building, visualizing all rooms and amenities. The system gives all stakeholders of a company a common operating picture by providing enhanced insights into resource management and work processes.

Employees are empowered to interact with their workplace environment more actively and connect with each other face to face more easily. By increasing the transparency of workplace operations and encouraging engagement from all parties, workflow efficiencies and productivity can be increased.



Application domains of LBS

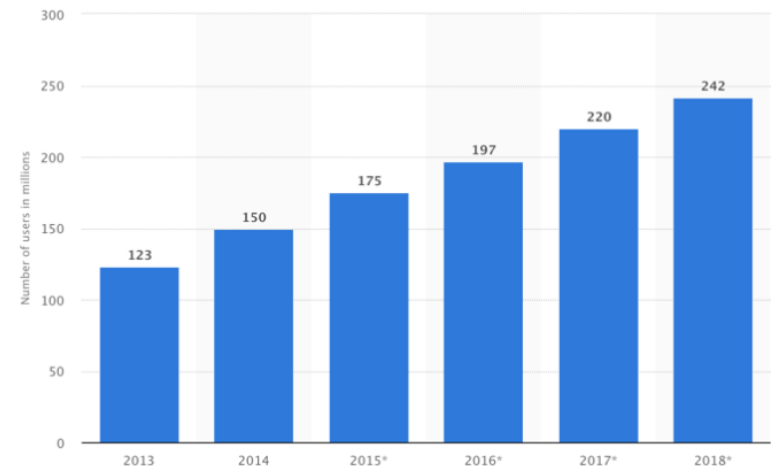


Serviços baseados na Localização

Starting in the late 1990s, LBS apps resulted from the convergence of three different technologies: mobile internet access, global positioning, and advanced graphic interfaces.

The LBS technology market is segmented into several different application uses:

- Navigation
- Search and advertising
- Infotainment
- Tracking
- Games and augmented reality



Research from Kantar TNS shows that [navigation is the most popular type of LBS app](#) (46%), followed by finding restaurants (26%), finding friends nearby (22%), checking public transportation (19%), and receiving special deals or offers from retailers (13%).

7 Great Location-Based Services Apps (That Aren't Google Maps)

•1. Foursquare

Foursquare was an LBS app innovator, popularizing the idea of checking into locations through a mobile device (a use that has been replicated by numerous other apps, such as Facebook and Yelp).

•4. Curbside

On Curbside, the process is as follows: the user places an order online, the retailer or restaurant fills the order, the customer gets an alert that the order is ready, the retailer/restaurant gets an alert when the customer arrives, and an employee carries the order out to the customer.

•3. Pokémon Go

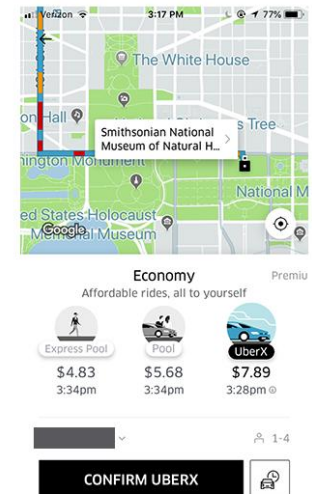
•5. Target

•6. Gas Buddy

•2. Dark Sky

Here's a weather app that many will find really useful. Users can select from a number of alert types – precise minute-by-minute updates for rain or snow in their locations, severe weather forecasts with timelines, etc

•7. Uber





Where matters.

Put the most trusted, independent location data and technology platform to work for your business.



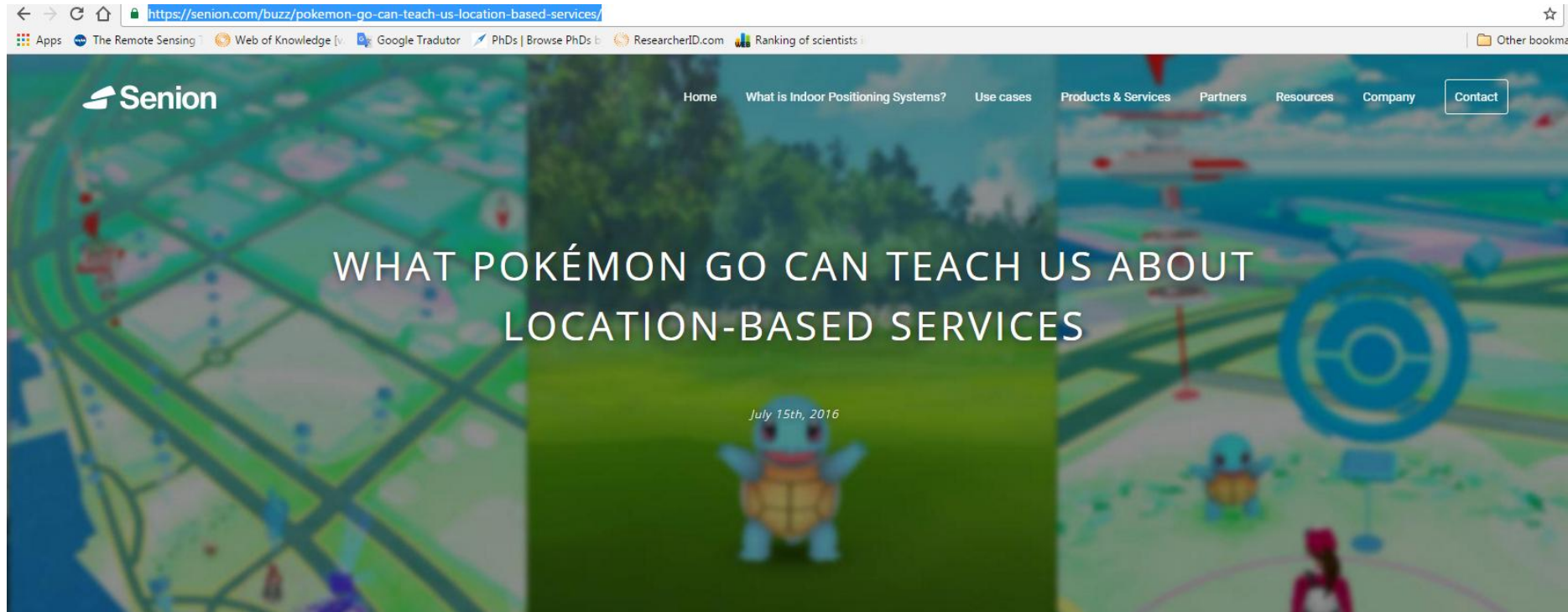
For Marketers
Turn your marketing
into real-world visits.



For Developers
Give your software a
better sense of place.



For Explorers
Discover the best things
to eat, see and do.



At this stage, I assume few have missed the latest Pokémon craze that has taken the world by storm recently. Originally released on July 6 in the US, Australian and New Zealand markets, the game has quickly become a force to be reckoned with. So what is it and what has it got to do with location?

Europe has launched an initiative to save lives through in-vehicle communication and positioning technology.

FIAMMETTA DIANI, ALBERTO FERNÁNDEZ-WYTENBACH, AND MARCO LISI

Share via:  Slashdot  Technorati  Twitter
 Facebook

On April 28, 2015, the European Parliament voted in favor of an eCall regulation, which requires all new models of passenger cars and light vans that will be certified for the European market to be equipped with the automated emergency-call technology beginning in April 2018. The measure applies to all such vehicles regardless of selling price.

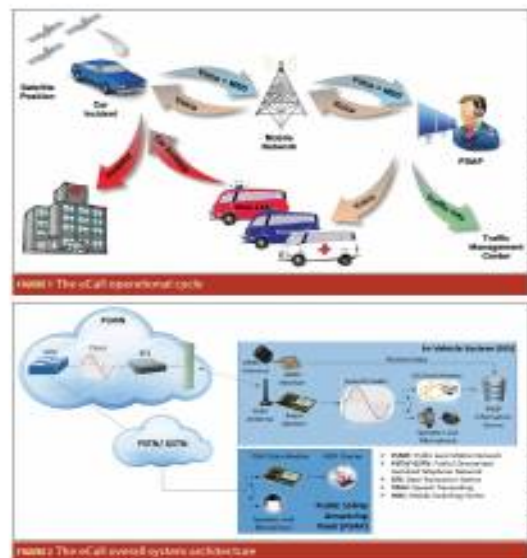
In the future, a similar service may be implemented for trucks as well.

eCall was developed to address the problem that drivers involved in accidents often have inaccurate awareness of their location, especially on interurban roads or abroad. In the most crucial cases, victims may not be able to call because they have been injured or trapped, and no witnesses or passers-by may be around to assist them.

The eCall system, which provides the exact location of an accident and requires no subscription, will bring emergency services to crash victims as quickly as possible. In the event of a serious accident, eCall automatically dials 112, Europe's single emergency number.

<http://www.insidegnss.com/node/4720>

In addition to the vehicle's exact location — which in many, if not most cases, will draw on



Figures 1 & 2 (Click image to enlarge.)

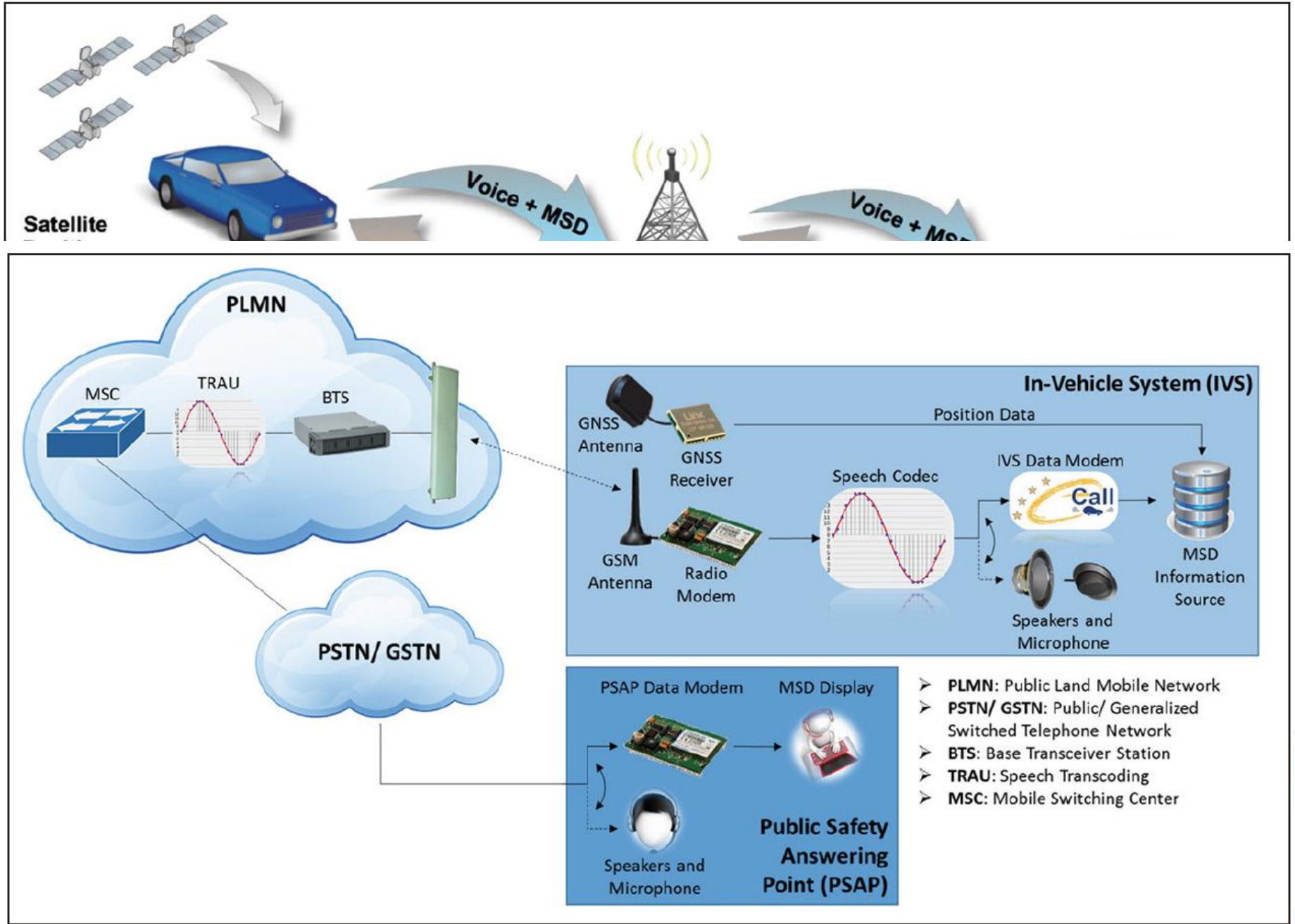


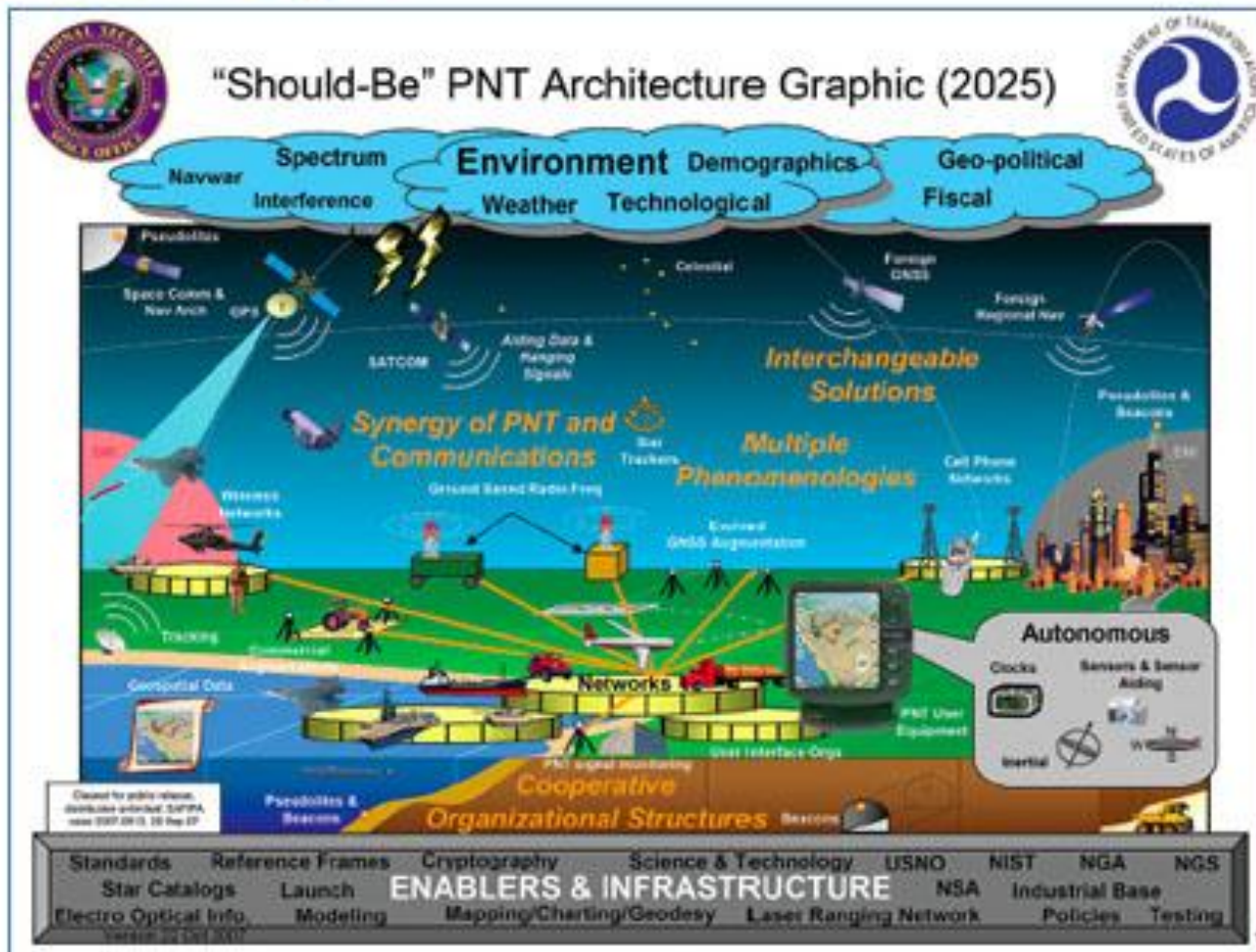
FIGURE 2 The eCall overall system architecture



<http://www.insidegnss.com/auto/popupimage/TLSLo.jpg>



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