Satellite assisted communication with cellphones in remote emergency situations

SOS Alarm, Björn Skoglund,
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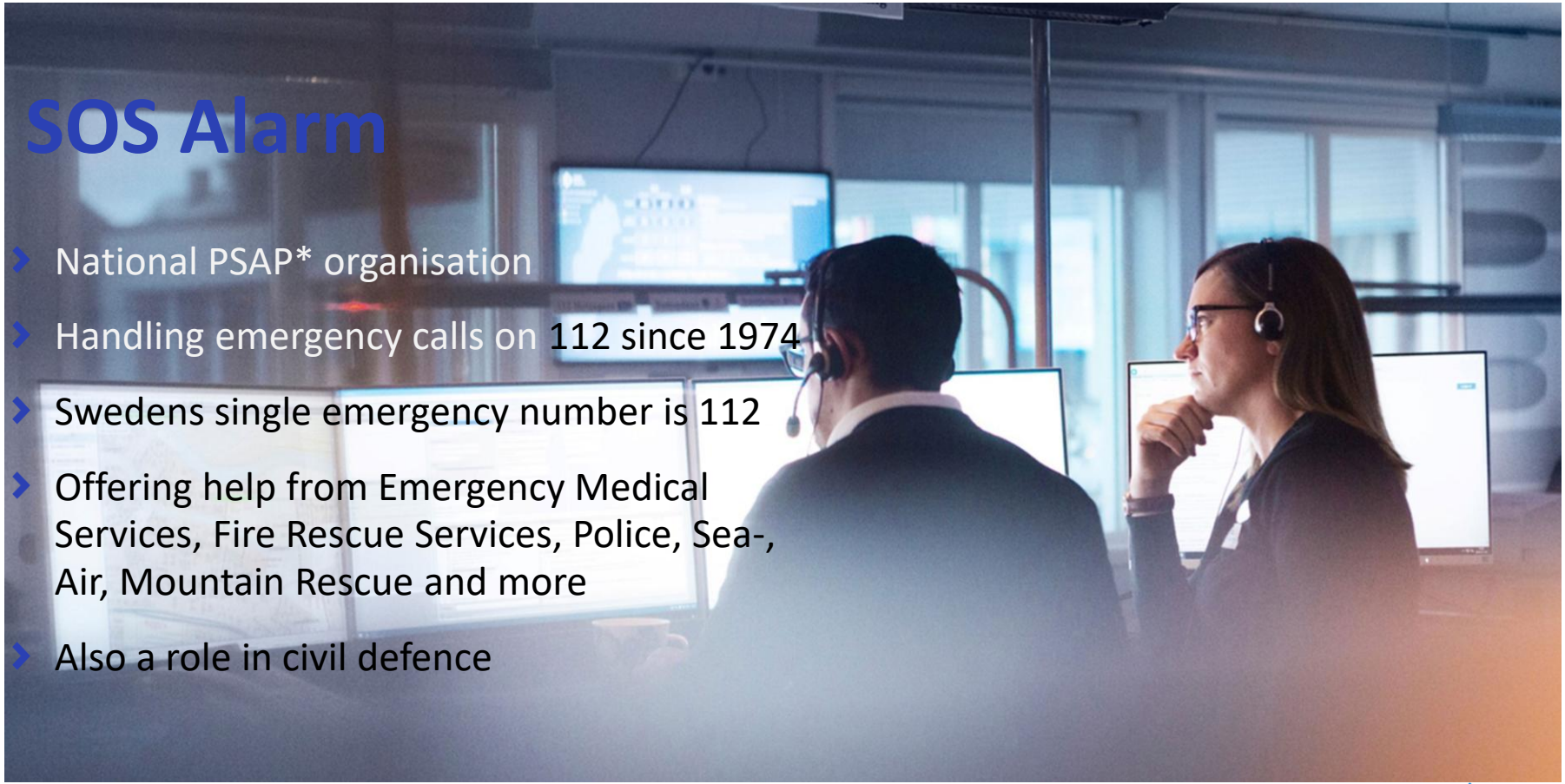


- National PSAP* organisation
- Handling emergency calls on 112 since 1974
- Swedens single emergency number is 112
- Offering help from Emergency Medical Services, Fire Rescue Services, Police, Sea-, Air, Mountain Rescue and more
- Also a role in civil defence

* PSAP = Public Safety Answering Point

What and where?

- The two basic and most important questions that SOS Alarm will ask you when you call 112 are:

WHAT has happened?

Where is your emergency?

- Without answers to these questions hard/impossible to send help….

Where: Location when calling 112

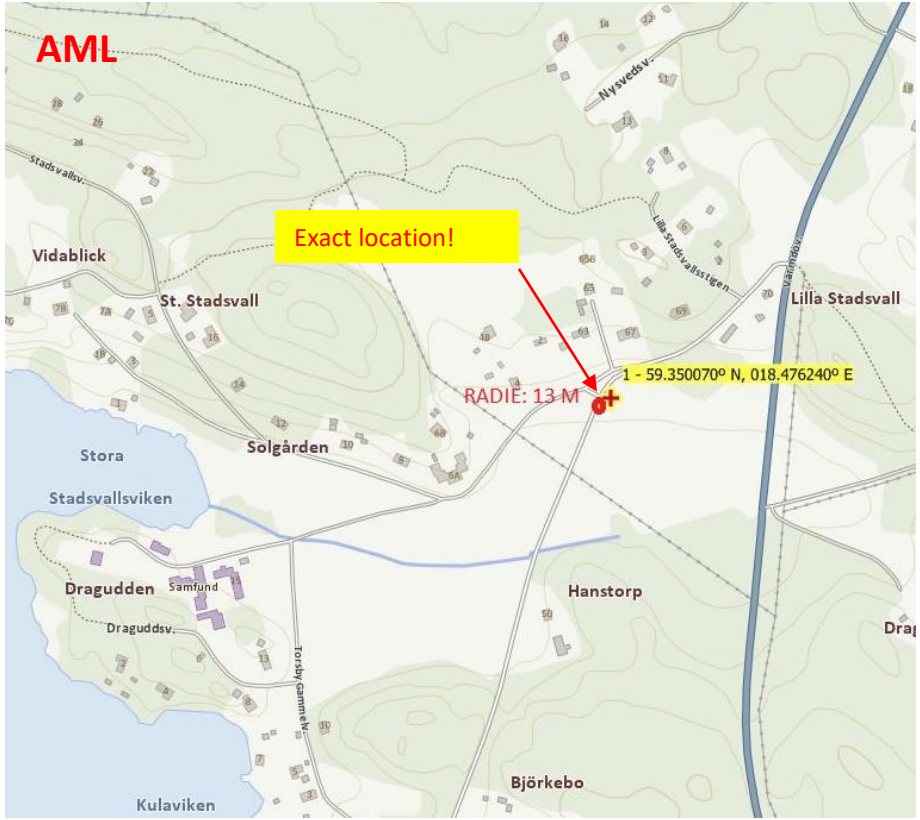
Before 2019

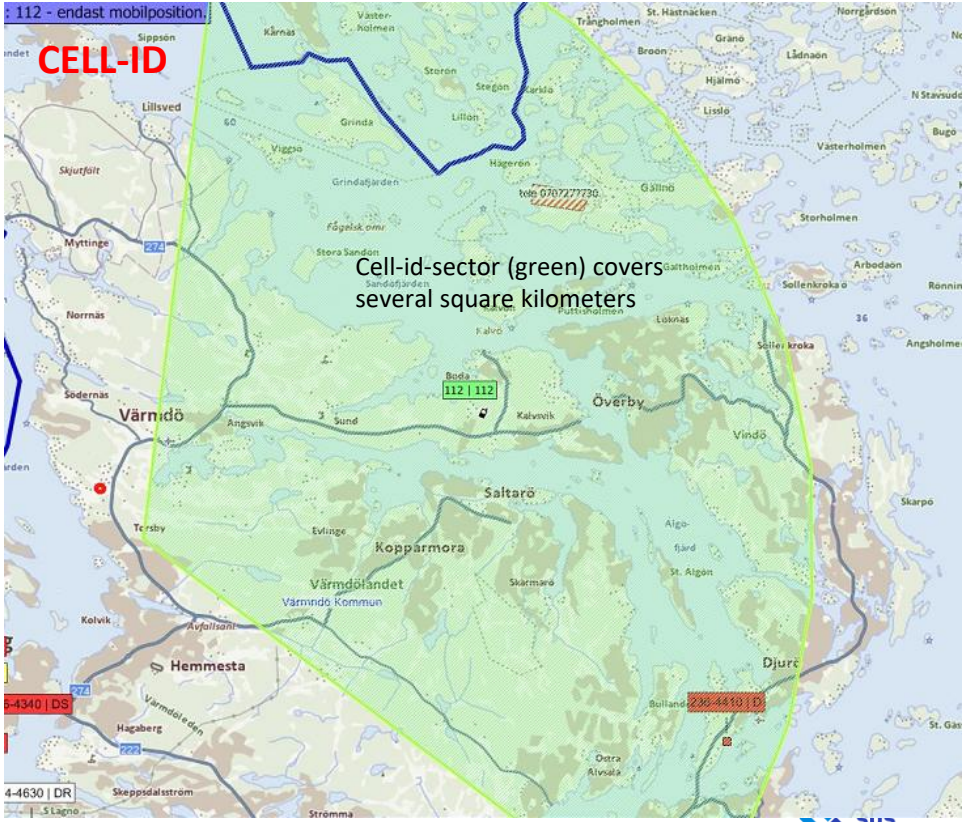
- Only Cell-ID from mobile operators
- Often large areas, depending on number of cell towers (urban vs. rural environment)
- Radius normally between 500 meters up to 2 kilometers
- Sometimes caller outside presented area
- Helpful, but not exact

After 2019

- Implementation of AML – Advanced Mobile Location
- Location from smartphones through satellite (and wifi)
- Functionality in the OS
- Radius normally between 15 to 65 meters
- Exact and reliable
- Works best outdoors, but perfect in road traffic accidents or finding lost people
- Really helpful!

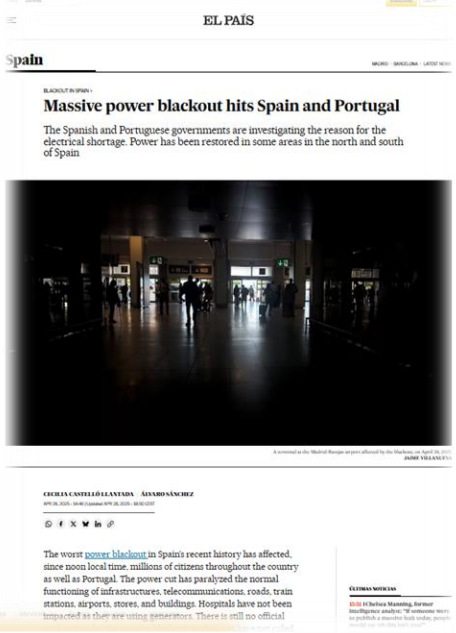
Example of AML vs. Cell-ID in rural environment





What: Communication with 112

- Important for caller in an emergency to reach 112 and get immediate help
- Today exclusively relying on phone calls
- But what if, like massive telecom or power outage (like in Spain and Portugal 28th April 2025)?
- Sweden also has vast remote mountain areas up north and a long coast line with no cell coverage
- Several cases every year where people are missing or wounded in the mountain areas or in distress at sea


EL PAÍS

Spain

Massive power blackout hits Spain and Portugal

The Spanish and Portuguese governments are investigating the reason for the electrical shortage. Power has been restored in some areas in the north and south of Spain

The worst power blackout in Spain's recent history has affected, since noon local time, millions of citizens throughout the country as well as Portugal. The power cut has paralyzed the normal functioning of infrastructures, telecommunications, roads, train stations, airports, stores, and buildings. Hospitals have not been impacted as they are using generators. There is still no official


POST failure paralysed Luxembourg

Last time updated
24.07.25

A major network outage at the main telecoms operator POST has affected the entire Grand Duchy. At around 16:15 local time, internet, mobile and landline communications were down. The situation was particularly worrying because the emergency numbers 112 and 113 were unavailable.

In the face of the risk of citizens losing access to rescue services, the Prime Minister immediately convened a crisis centre. It was headed by the Minister of Economy and Energy, Lex Delles, and attended by the Minister of the Interior, Léon Gloden. By 20:00, basic services had been restored and emergency lines were available again, as was access to the internet and voice communications.

While the causes of the incident have not been officially announced, POST is continuing its internal investigation.

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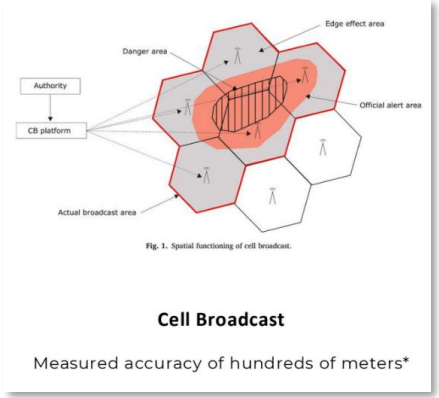
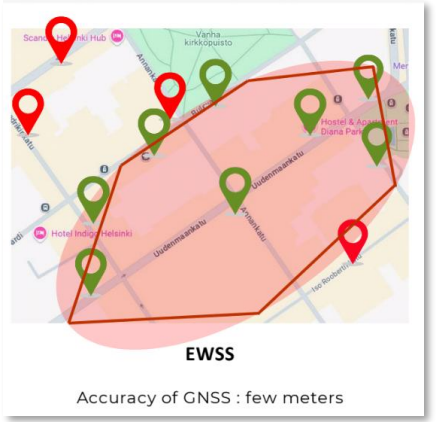
Communication with 112

- Both Apple and Google now has services to communicate via satellite (though different set-ups)
- Communication through text messages
- Only works to contact emergency services when you don’t have any network coverage
- Slower way of communication, but at least it is a way, instead of no way at all
- Sweden to implement one of OS in beginning of 2026
- Not expecting more than a few calls a year, but can potentially save lives

Public Warnings via satellite

- Public warnings can be issued to the public in case of danger to health, property or environment, for example when fires causes unhealthy smoke, at natural disasters or gas leaks
- Galileo EWSS on its way (Emergency Warning Satellite Service)
- Can be integrated in existing PW systems
- Several benefits compared to existing channels; works even in power and telecom outages and can be more precise
- A limitation though in free text messages, uses templates
- Expected to be operational in mid-2026





Illustrations from presentation at EENA Conference 2025 in Helsinki by Charly Faradji

So, what can satellites do for us?

- Way of communication in emergencies from remote places, or when infrastructure (power, telecom) is down
- Locating caller
- Redundant way of Public Warning with precision
- Offers redundancy and precision
- Great benefit for PSAPs, help resources – and of course for people in distress!
- Learnings from Ukraine?
- Live feed? (costs?)
- Important to have tech giants on your side!

Thank you!

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