

แพลตฟอร์มดิจิทัลระบบรับแจ้งฉุกเฉิน 1669

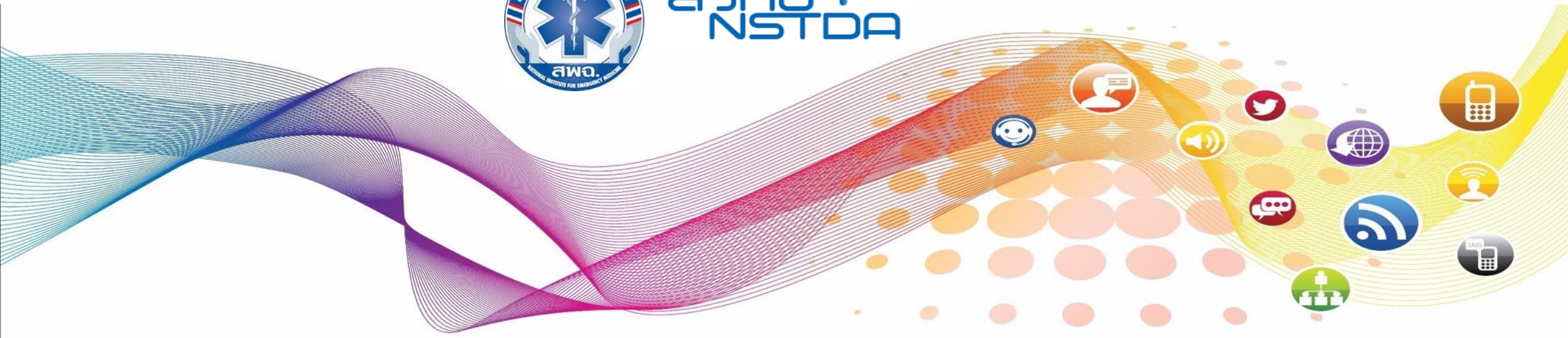
Digital EMS 1669 (D1669) Platform

ดร.ณัฐนันท์ ทัดพิทักษ์กุล

ศูนย์วิจัยเทคโนโลยีสิ่งอำนวยความสะดวกและเครื่องมือแพทย์ (A-MED)



สวทช.
NSTDA



Emergency Call Center Emergency Communication

What is an "emergency communication"?

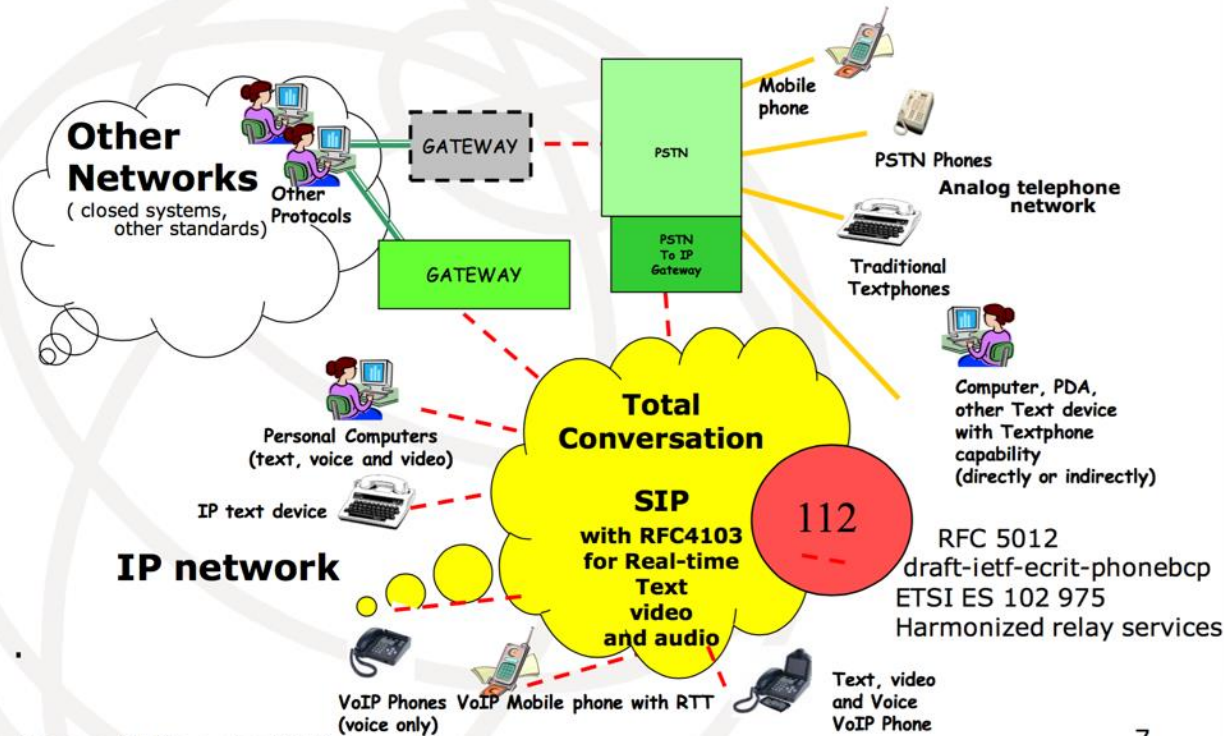
Recital 20: "Technical developments make it possible for end-users to **access emergency services not only by voice calls but also by other interpersonal communications services**. The concept of emergency communication should therefore cover all those interpersonal communications services that allow such emergency services access."

Recital 285: "Emergency communications are means of communication, that include not only voice communications **but also SMS, messaging, video or other types of communications, for example real time text, total conversation and relay services.**"

Total Conversation

Video + Voice + Real Time Text

The common standards



Geneva, 25 November 2011

7

The 112-center view of Total conversation 112 calls In SOS Alarm 112-center in Sweden

112-terminal with 3-party Total conversation view with video and real-time text display



Geneva, 25 November 2011

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Emergency Communication + Accessibility

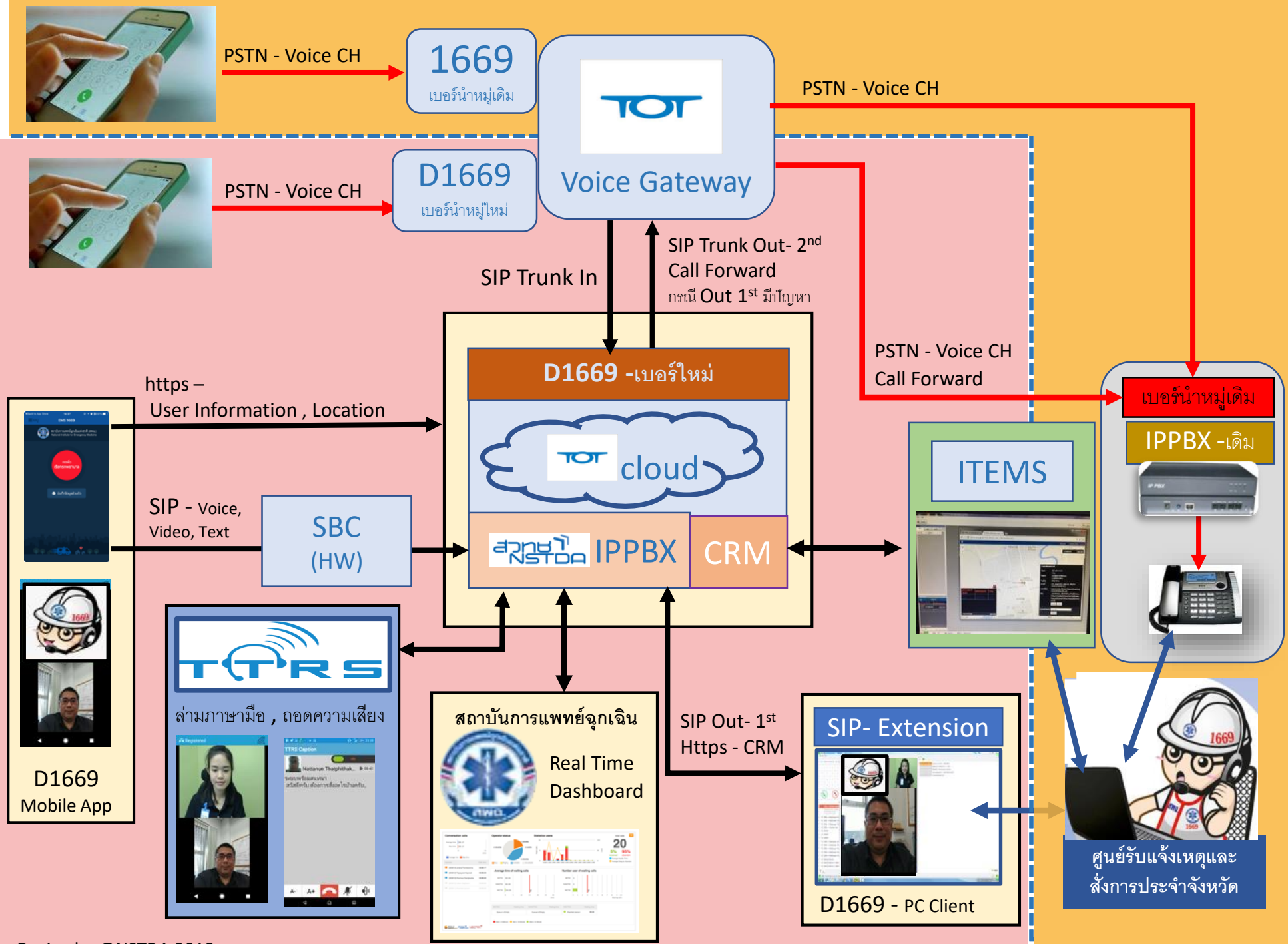
Accessibility to people with disabilities



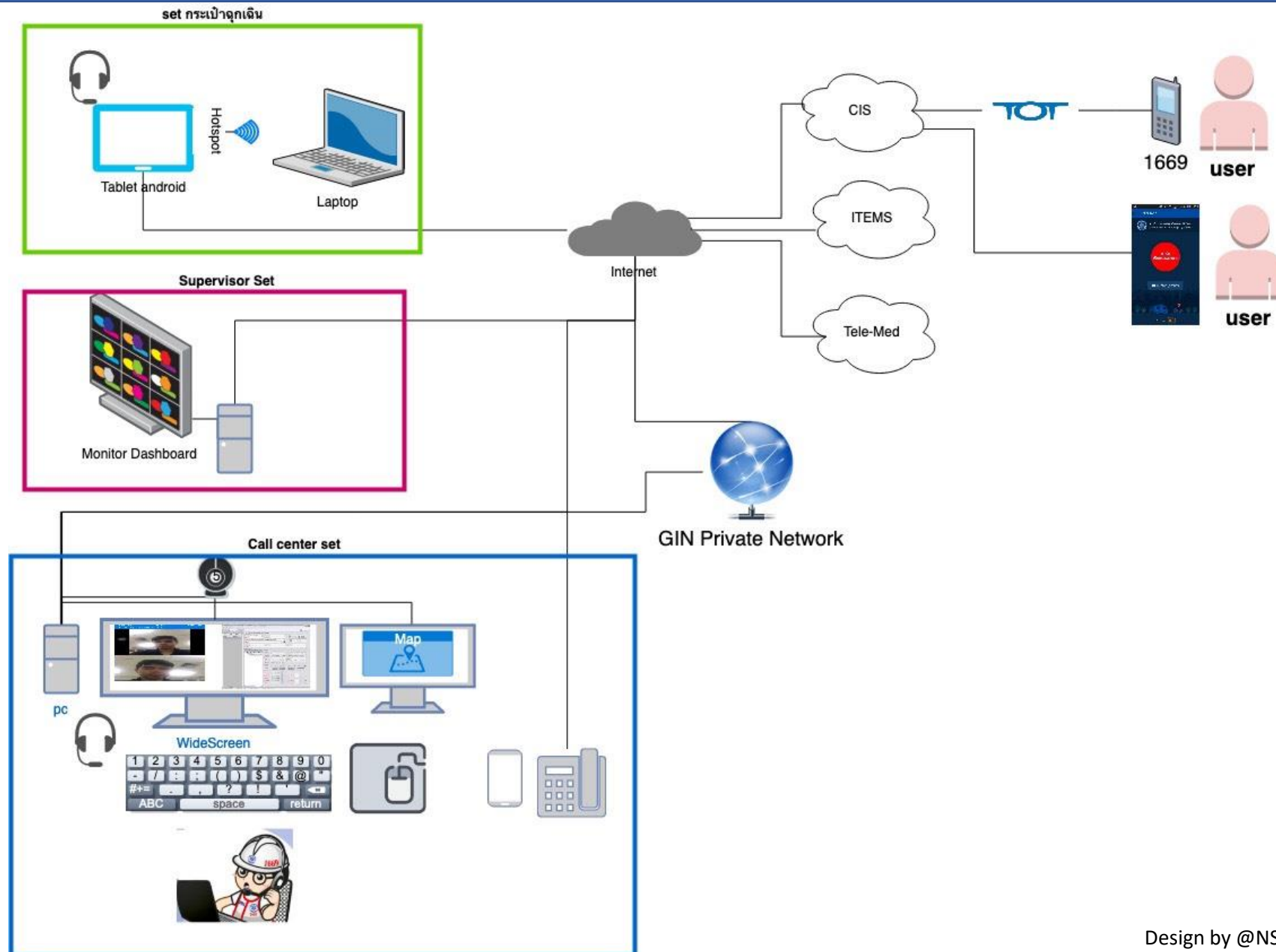
"Emergency communications are means of communication, that include not only voice communications **but also SMS, messaging, video or other types of communications**, for example real time text, total conversation and relay services." (Recital 285)

European Electronic Communications Code

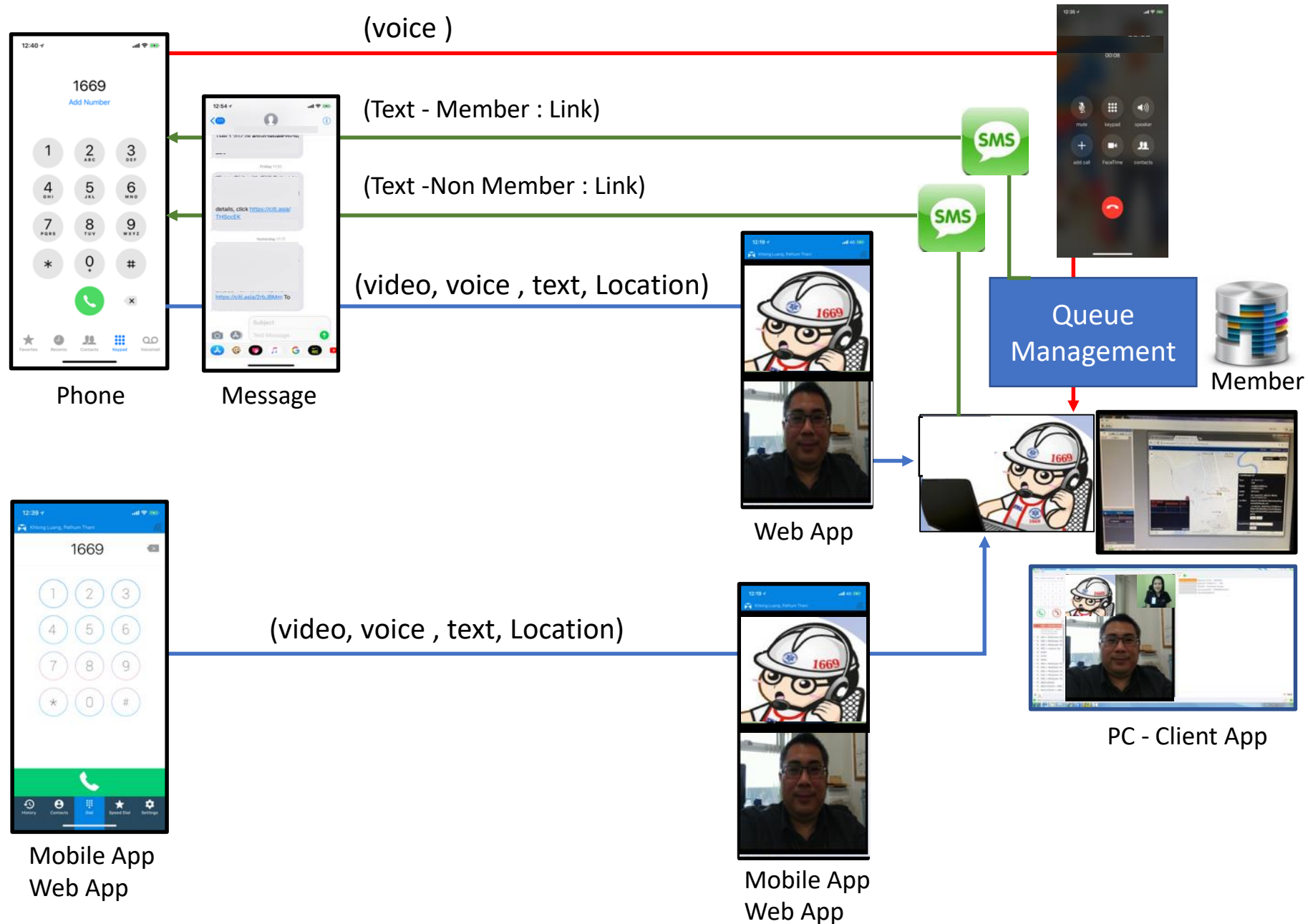
"Member States shall ensure that access for end-users with disabilities to emergency services is available **through emergency communications** and equivalent to that enjoyed by other end-users in accordance with Union law harmonising accessibility requirements for products and services."



อุปกรณ์ D1669 Platform สำหรับ Communication Information System (CIS)



การใช้บริการ CIS แบบ Next Gen D1669 Platform + AML



Advance Mobile Location (AML)



In 3 years, Advanced Mobile Location (AML) has brought considerable improvements to public safety. In this panel, experts discuss the latest updates and the future improvements of the technology.

Chair: Christoph Kautz, Deputy Head, Unit Galileo and EGNOS – Applications, security, international co-operation, European Commission

Benoît Vivier, Public Affairs Manager, EENA - Latest updates on AML

Fiona Lee, ELS Business Operations, Google & Soonil Nagarkar, Senior Software Engineer, Google

Ben Quay, Programme Director, Ministry of Business, Innovation and Employment, New-Zealand - AML in New Zealand

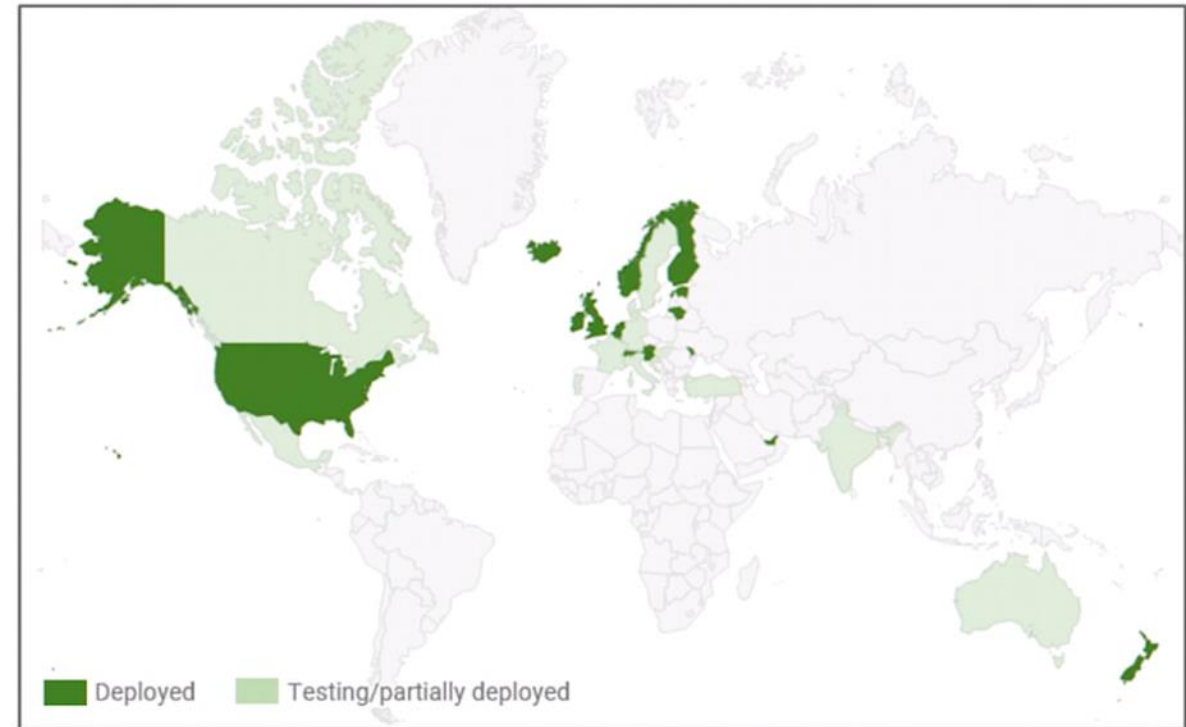
Sven Bruun, Senior Adviser, Department of Emergency Medical Services, Directorate of Health, Norway

Strategic Operations Manager Representative from National Risk & Resilience Department, Scottish Ambulance Service, Scotland - Deploying AML in a PSAP

Status today

Currently deployed in **18 countries (600+ million people, 1.3M calls per day)** via partnerships with:

- Governments
- Mobile network operators
- Public safety infrastructure vendors



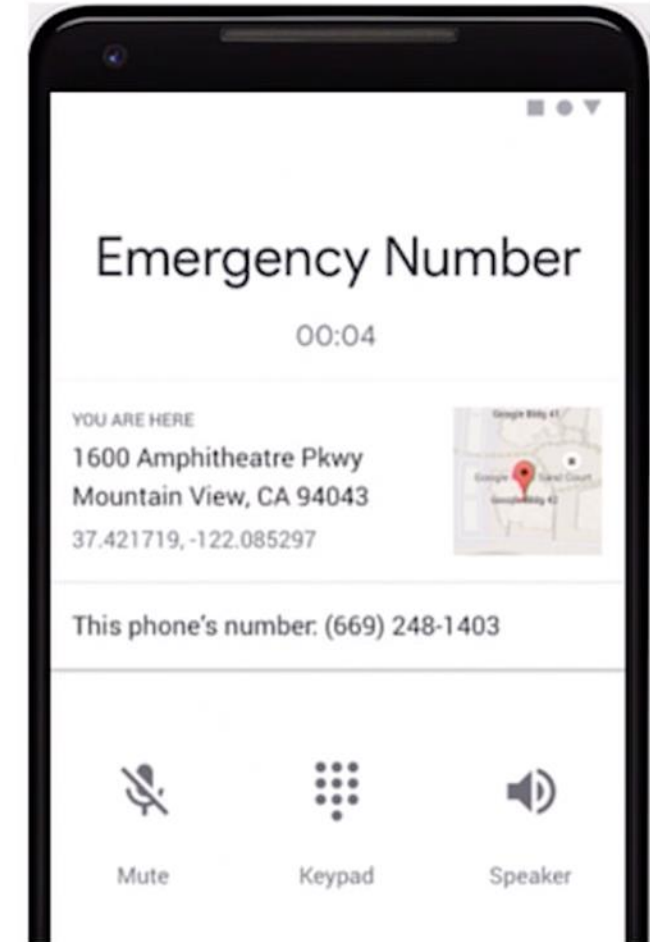
Google

Confidential + Proprietary

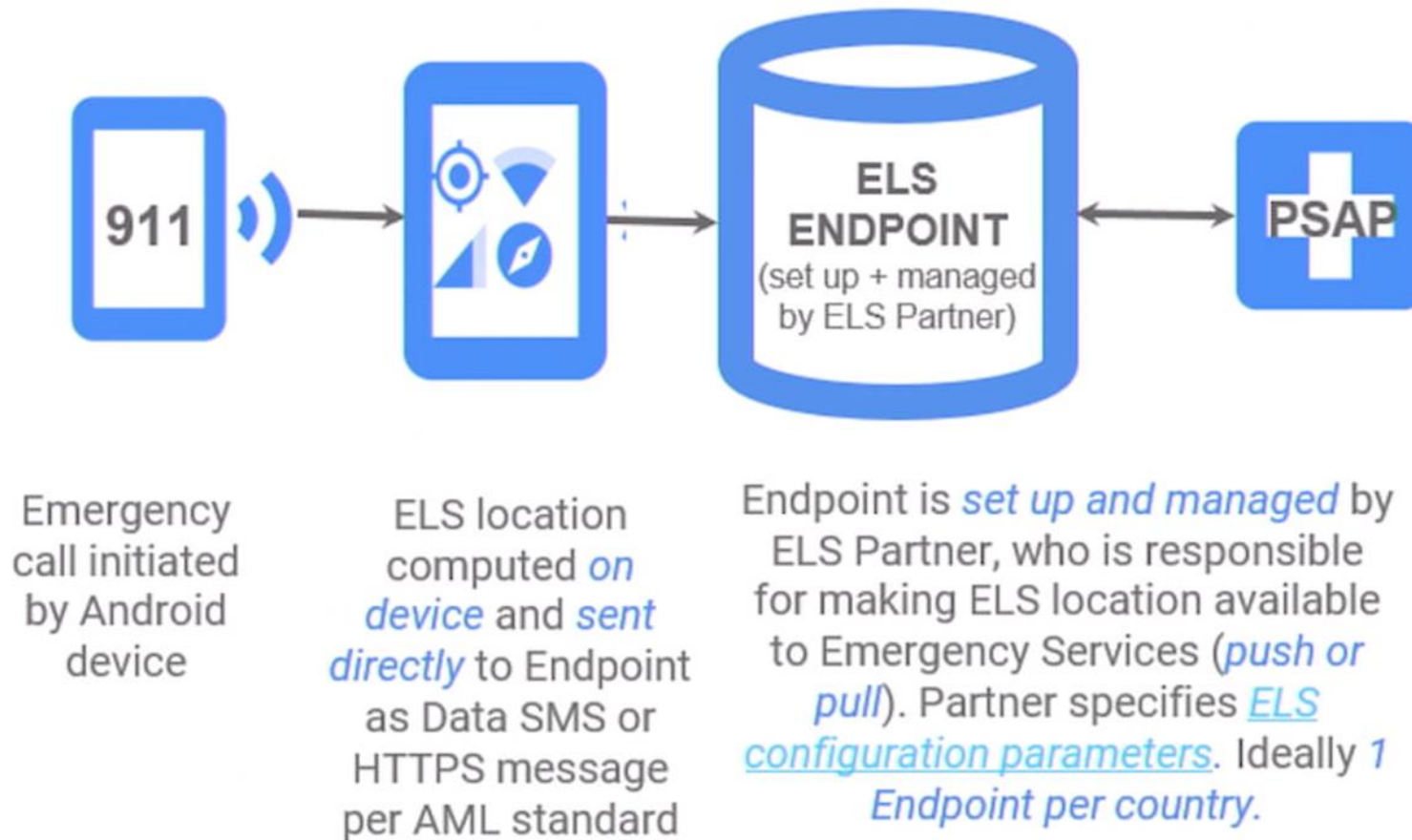
Android Emergency Location Service

Supplemental service that quickly sends enhanced location **from an Android handset** to emergency services when the user contacts 112.

- **Seamless, global solution**
 - Supported in ~99% of Android devices with Google Play Services (Android OS 4.0/ICS and up).
 - Regular over-the-air updates.
- **Handset Initiated & Handset Derived Location**
 - ELS only activates *when* user contacts 112
 - Location calculated *on-device* – location is fused multiple sources: cell, GPS, wi-fi, device sensors.
- **Free**
 - *Free* for all ELS partners.



Emergency Location Data Flow



AML - Advanced Mobile Location, open standard for sending emergency location (supported by Android ELS)

ELS Endpoint: a SMSC or HTTPS server maintained by partner that can receive ELS emergency location data

ELS Partner: carrier/MNO, government or public safety vendor that meets ELS [partner requirements](#)

PSAP (Public Safety Answering Point): call center & dispatch control for emergency services

Advance Mobile Location (AML)

Is it an egg?

No, it's two GPS records

The screenshot shows the 'Emergency Caller Location Information' interface. At the top, there is a search bar for 'Caller number' with the value '027000003' and a 'Retrieve ECLI' button. Below this, there is a section for 'High precision records' with a toggle switch. The main content is a table with 4 results. The first two results are highlighted with green and red circles, respectively, and are linked to a map on the right. The map shows a residential street grid with two overlapping circles: a larger green one and a smaller red one. A red dashed arrow points from the text 'AML initiated by an 111 emergency call' to the red circle, and a green dashed arrow points from 'A-GNSS requested from the network' to the green circle.

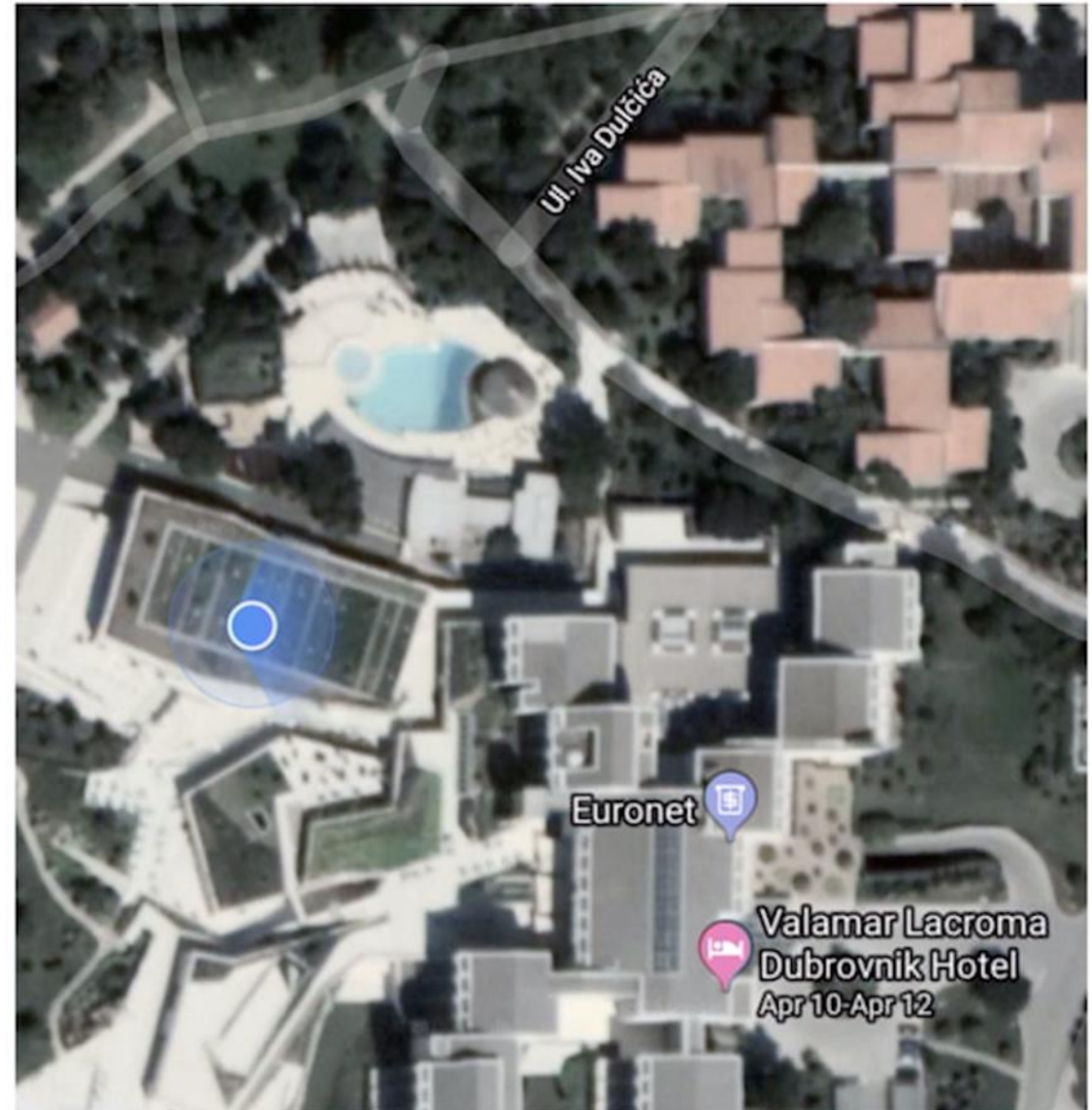
4 Results	Time	Method	Area	Radius
	03:15:40 20/09/2018	GPS	8,042 m2	—
Locality Chartwell Hamilton 3210		Type MLC	Shape Elliptical Area	
		Carrier Unknown	Coordinates (Lat, Long): -37.7538265, 175.2819335	
		Copy record	Copy coordinates	
	03:13:40 20/09/2018	GPS	1,256 m2	20
Locality 151 Hukanui Road Chartwell Hamilton 3210		Type Handset	Shape Circular Area	
		Carrier 2degrees	Coordinates (Lat, Long): -37.753826, 175.281933	
		Copy record	Copy coordinates	
	03:12:40 20/09/2018	Cell Tower	>99,999 m2	1500
	03:11:40 20/09/2018	Cell Tower	>99,999 m2	—

AML initiated by an 111 emergency call

A-GNSS requested from the network



ELS Test: Indoor
Location @ Parallel
Room B on ELS
Manager app



Advance Mobile Location (AML)



<https://www.youtube.com/watch?v=8HvOGXld-2A>

Advance Mobile Location (AML)



Remarkable Rescue Award

Notruf Niederösterreich, Austria
For rescuing a crashed paraglider using
Advanced Mobile Location (AML)

Paraglider Andreas Gremmel crashed in a remote, alpine area of Austria. He was injured, could not describe where he was, and his mobile reception was very weak. Emergency services tried to call Andreas back to get more information, but they couldn't connect. Thankfully, the Notruf emergency control room uses Advanced Mobile Location (AML). AML is a lifesaving technology which uses your smartphone location services to let emergency services know where to find you when you dial the emergency number. The technology needs to be activated on a country per country basis. Thanks to AML, the Notruf team could locate Andreas within a 6 metre radius and the rescue mission could be immediately launched. A helicopter and a Mountain Rescue Service crew were alerted and Andreas was rescued to safety within just 50 minutes.

The award was handed by paraglider Andreas Gremmel, who was rescued by the team.

Thai - Advance Mobile Location (TH-AML)

