Turkish Pilot Site
eCall Experience Outside of Europe

HeERO International Conference
27 November 2014
Madrid, Spain

Agenda

- Project consortium in Turkey
- Strategy for eCall deployment in Turkey
- eCall experience in Turkish pilot site
- Performance evaluation
- Conclusion

Project Consortium in Turkey

- Authority responsible for 112 and eCall Projects: Ministry of Interior

| ROLE	NAME
PSAP Service Provider – Technology Provider	Aselsan
Mobile Network Operator (MNO)	Turkcell
Fixed Network Operator (FNO)	Türk Telekom
IVS Provider – Automative Technology Provider	Tofaş and Oyak Renault

Strategy for e-Call Deployment in Turkey (1/3)

Antalya

- New 112 model in Turkey:
    - 81 provinces with their own 112 centers
    - All emergency services in the same location
    - Implemented in 12 provinces (by Aselsan)
    - Planned to install 81 PSAPs by 2018
    - eCall system to be integrated into new model

- Pilot site for eCall: Antalya
    - Was a pilot site for 112 common number to reach emergency services
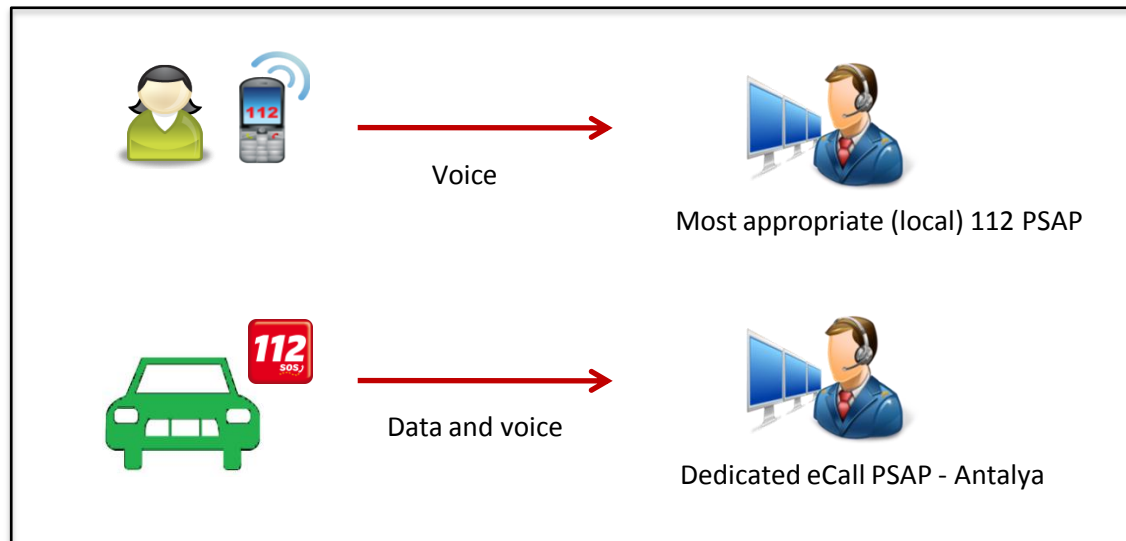   - Now, chosen for the pilot eCall implementation

Strategy for e-Call Deployment in Turkey (2/3)

112 model used in Turkey:

Call takers   Dispatchers   Mobile units
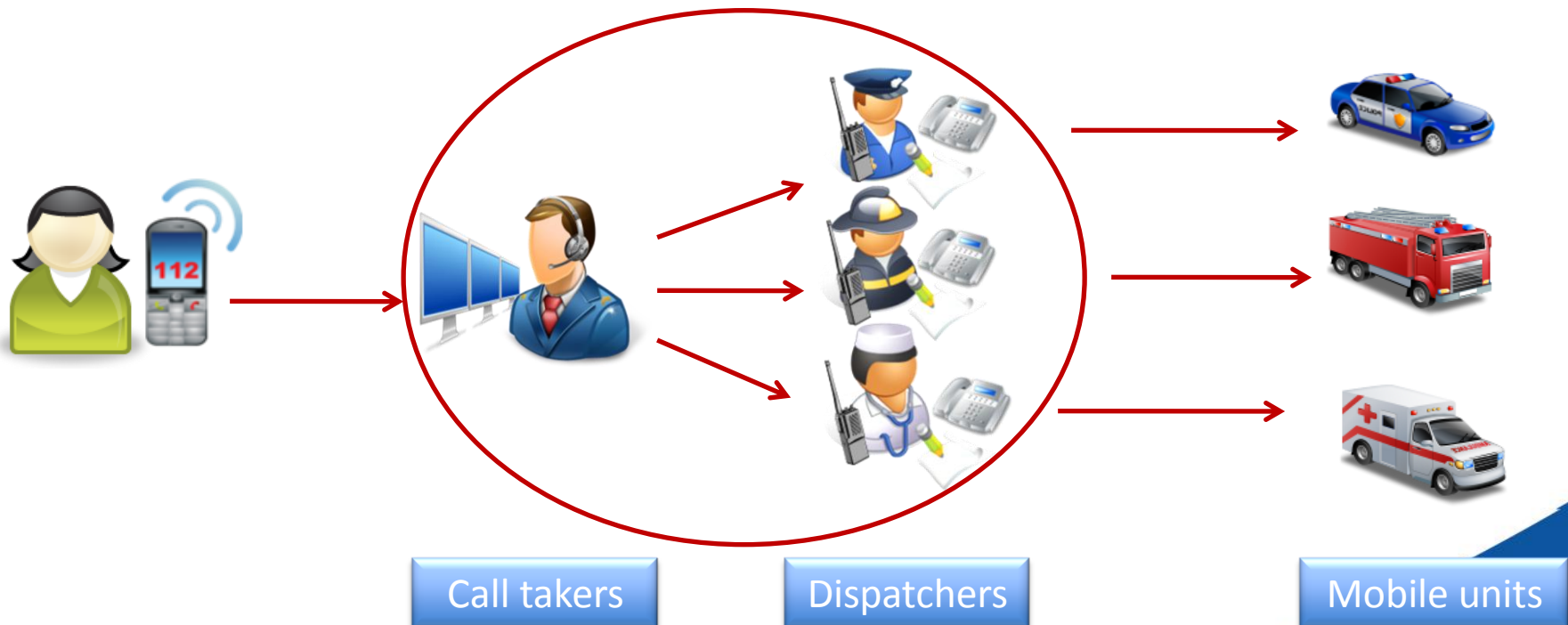
Strategy for e-Call Deployment in Turkey (3/3)

- eCall model that we consider using from 1 October 2017:

Voice → Most appropriate (local) 112 PSAP

Data and voice → Dedicated eCall PSAP - Antalya
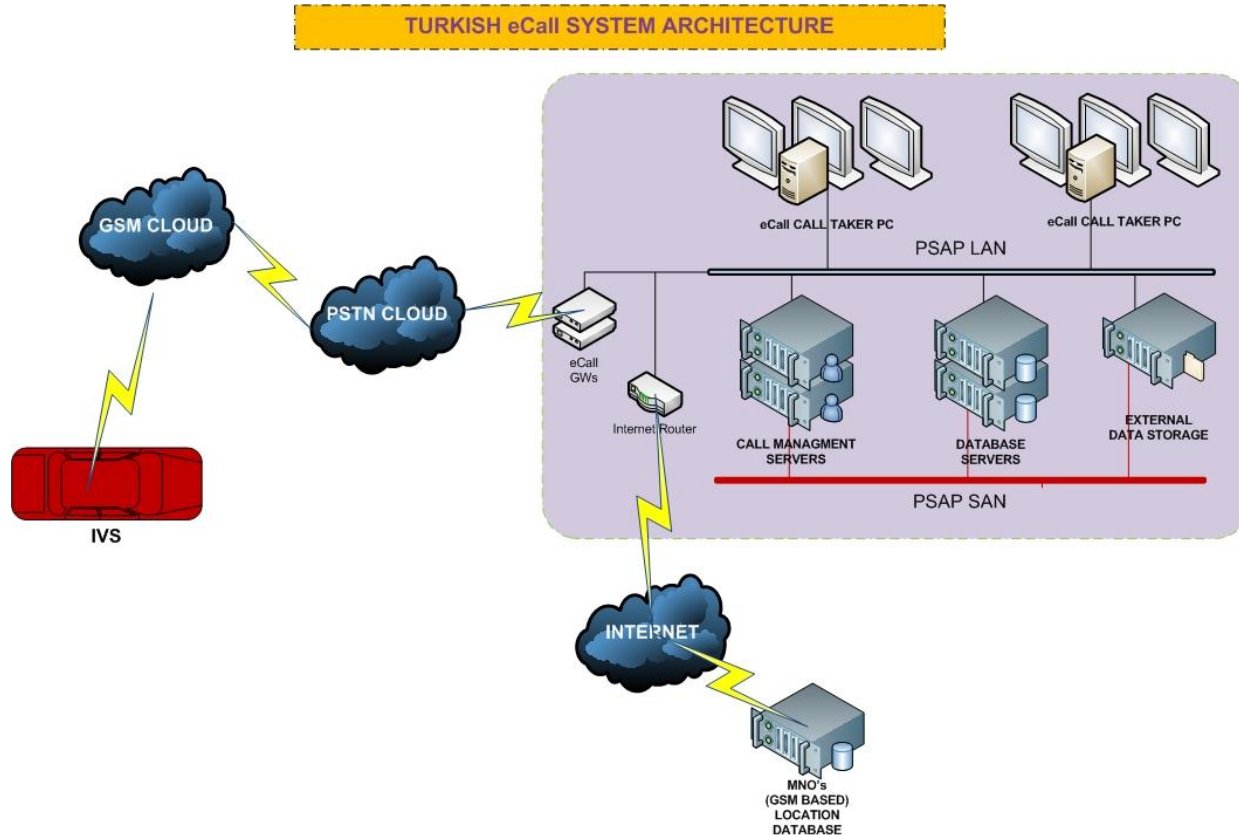
Experience in Turkish Pilot

- Turkish eCall pilot site: Antalya

- In Antalya: Existing 112 PSAP & eCall PSAP are at the same center.

- All types of eCalls identified in the mobile network -thanks to the eCall flag- are routed to this PSAP.

- 112 and eCall PSAPs have separate call takers.

- Some servers are shared between PSAPs, some are unique.

Experience in Turkish Pilot

- 2 eCall takers receive the eCalls
  - They monitor the MSD data
  - They see the incident location on the map
  - They make voice communication
  - Voice conversations are recorded

- eCall call takers send the incident information to the 112 PSAP system.

- After nationwide deployment, eCall PSAP in Antalya will send incident information to the local 112 PSAP.

Experience in Turkish Pilot

TURKISH eCall SYSTEM ARCHITECTURE
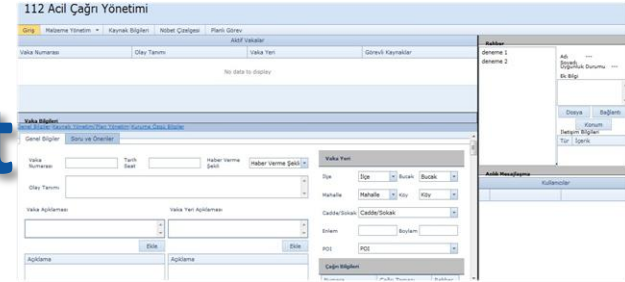
Experience in Turkish Pilot

- eCall PSAP

  - Some components of 112 and eCall PSAP infrastructures are used in common: *LAN and SAN components, system management, session and user management services*

  - Some components of eCall PSAP are unique to itself : PRI/SIP gateway and call management servers

- Redundant system solution

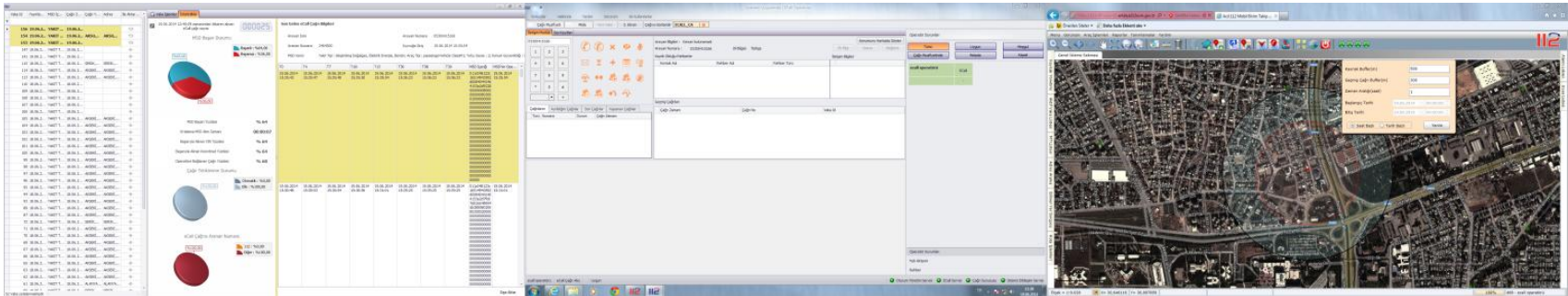# Experience in Turkish Pilot
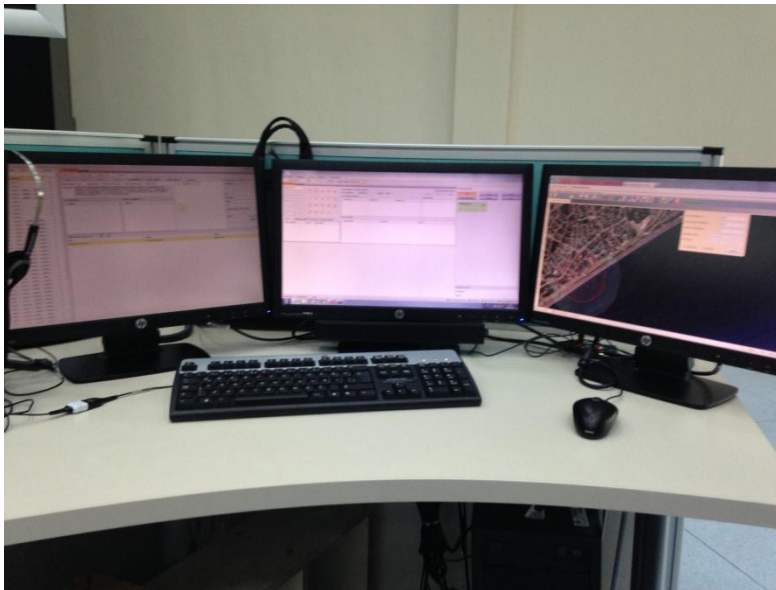
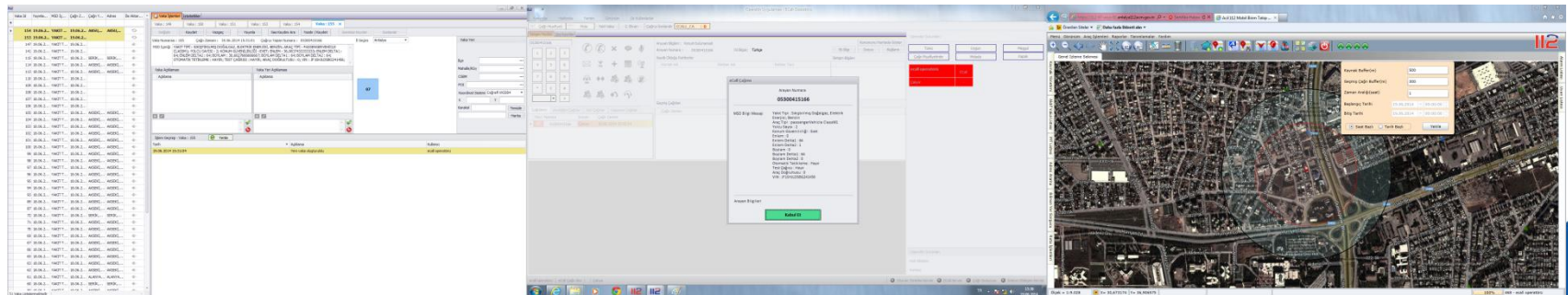eCall operator PC in Antalya PSAP

eCall servers in Antalya PSAP

Experience in Turkish Pilot

eCall operator screen with statistics interface

eCall operator screen with incoming call notification

H ERO
112 SOS
Harmonised eCall European Pilot

Experience in Turkish Pilot

- eCall flag detection:

    - There are three MNOs. Only Turkcell was involved in Turkish pilot.
    - Turkcell uses Ericsson switches for call routing.
    - In order to detect eCall flag in the tests, Turkcell updated the switch SW in Antalya central switch.
    - Same SW update was made in Turkcell's test system in İstanbul.
    - For nationwide deployment, an official SW update should be released by the switch manufacturer.
    - Other two MNOs announced their willingness to participate in the project.

Performance Evaluation

Lab Tests (Verification)

▸ In Aselsan testbed in Ankara

▸ The call number used: 154

▸ Manual eCalls

▸ Magneti Marelli IVS tested in desktop environment

▸ System tested for:

  ◦ Successful MSD reception
  ◦ Correct MSD extraction
  ◦ Availability of voice communication with IVS
  ◦ Integration with existing 112 PSAP

Field Tests (Operation)

▸ In Antalya

▸ The call number used: 112

▸ Manual eCalls

▸ Magneti Marelli and Civitronics IVS tested on vehicle

▸ System tested for:

  ◦ Successful MSD reception
  ◦ Correct MSD extraction
  ◦ Availability of voice communication with IVS
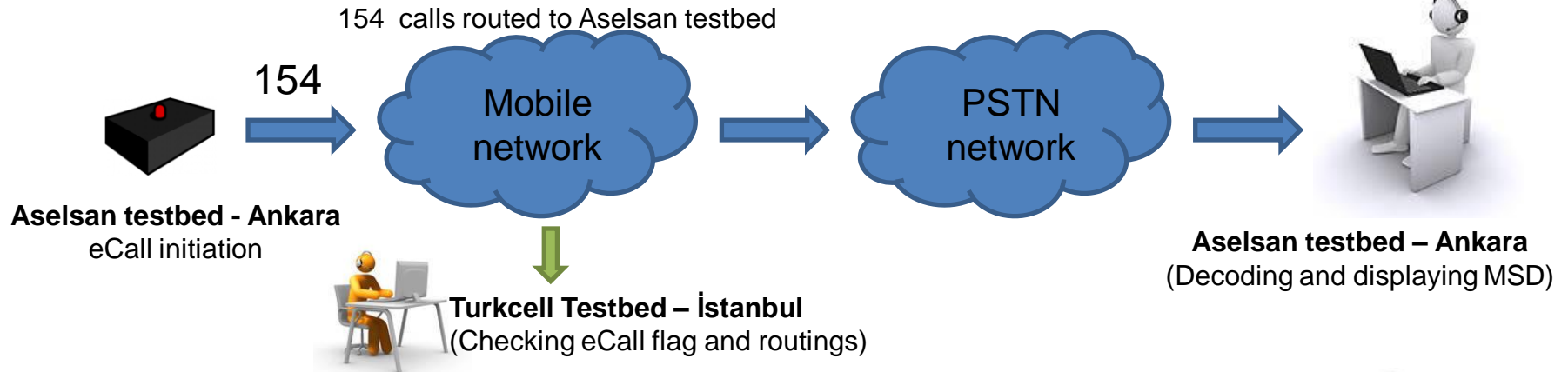 ◦ Integration with existing 112 PSAP
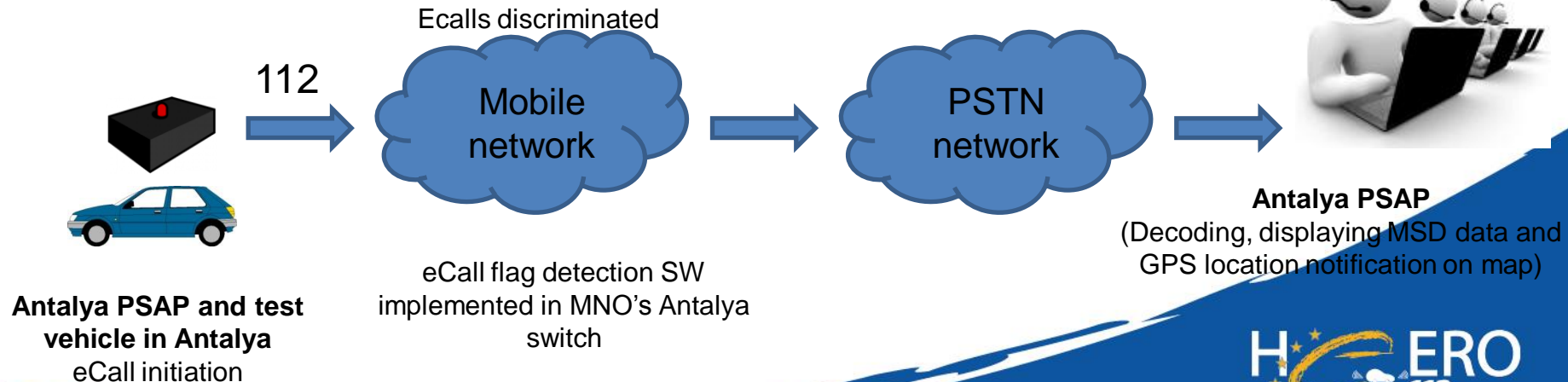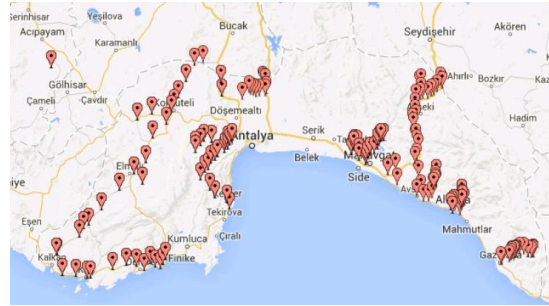 ◦ eCall location positioning on map

Tested in field

Harmonised eCall European Pilot

Performance Evaluation

- **Lab Tests:**

154 calls routed to Aselsan testbed

154

Mobile network

PSTN network

Aselsan testbed - Ankara
eCall initiation

Aselsan testbed – Ankara
(Decoding and displaying MSD)

Turkcell Testbed – İstanbul
(Checking eCall flag and routings)

- **Field Tests:**

Ecalls discriminated

112

Mobile network

PSTN network

Antalya PSAP
(Decoding, displaying MSD data and GPS location notification on map)

eCall flag detection SW implemented in MNO's Antalya switch

Antalya PSAP and test vehicle in Antalya
eCall initiation

Performance Evaluation

Field tests in Antalya

Lab tests:

Number of test calls: 470

Success rate of eCalls: 99 %

Field tests:

Number of test calls: 969

Success rate of eCalls using 112: 98 %

Conclusion

- Single eCall PSAP in Turkish pilot: Antalya.

- In Antalya, 112 PSAP and eCall PSAP operate at the same center.

- eCall flag detection is implemented in Antalya.

- The test results verified successful operation of the eCall PSAP without degrading the performance of the 112 PSAP.

- Having 112 and eCall PSAPs at the same center gives the opportunity to use some system components in common.

Harmonised eCall European Pilot

Thank you for your attention! Questions?

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