



Emergency call positioning

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- Definitions and introduction
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Definitions

- **emergency call** means a service, recognised as such by the Member State, that provides immediate and rapid assistance in situations where there is a direct risk to life or limb, individual or public health or safety, to private or public property, or the environment but not necessarily limited to these situations.
- **location information** means in a public mobile network the data processed indicating the geographic position of a user's mobile terminal and in a public fixed network the data about the physical address of the termination point.
- **Emergency call positioning** here means a mechanism to deliver user's location information to an emergence centre.

Note: First two definitions are inherited from EU's recommendation.

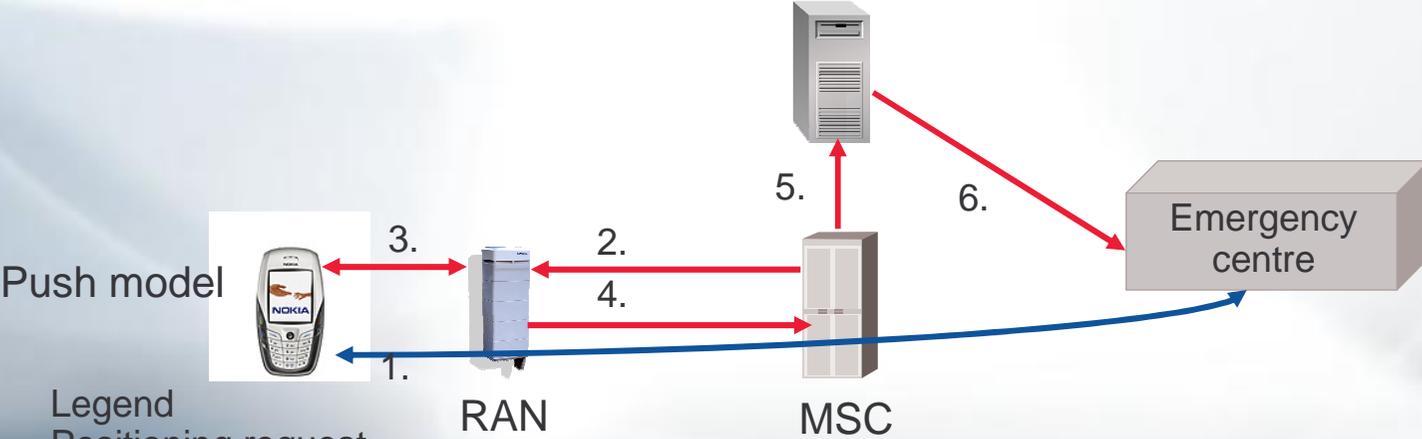
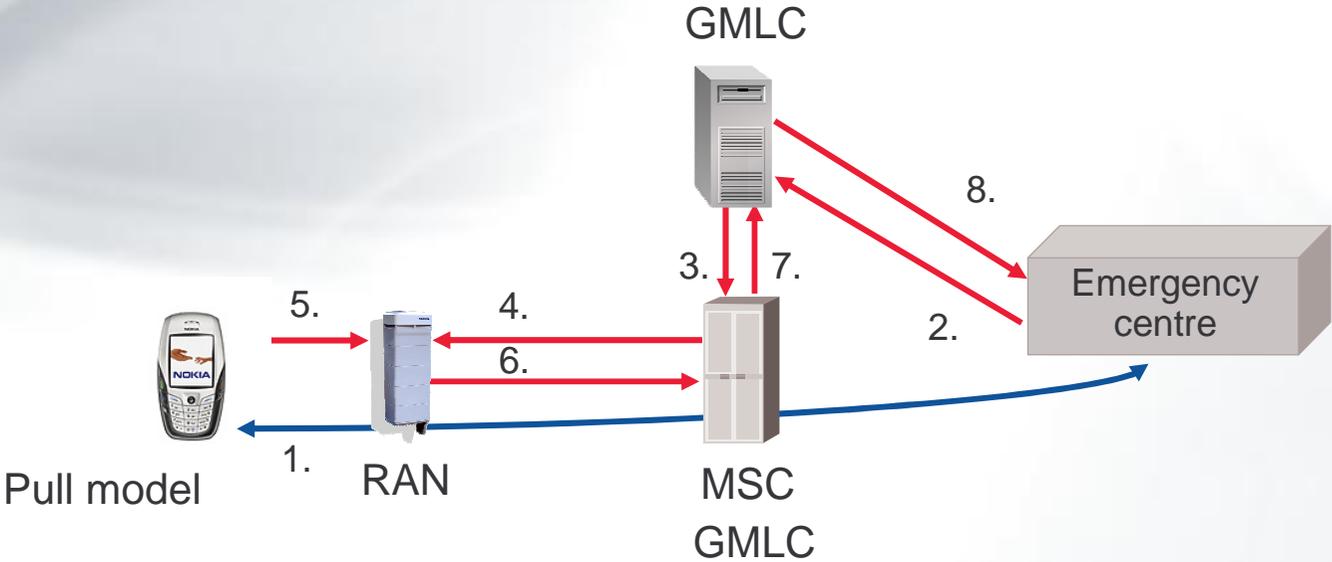
Regulatory status in European Union

- In July 2003 European Union released commission's recommendation on the processing of caller location in case of emergency call.
- Wireless operators are requested to forward (push) the best available location of the caller to public safety answering point.
- For the intermediate period, it is acceptable that wireless operators make location information available on request only (pull).
- This should apply to roaming users as well.
- Fixed public telephone network operators should make available the installation address of the line from which the emergency call is made.
- Location information should identify the originating network as well.
- Public safety answering points should be able to retrieve an updated location information during the call or after the call.
- European Union member states are requested to submit their implementation status by end of 2004.

Regulatory status in the United States

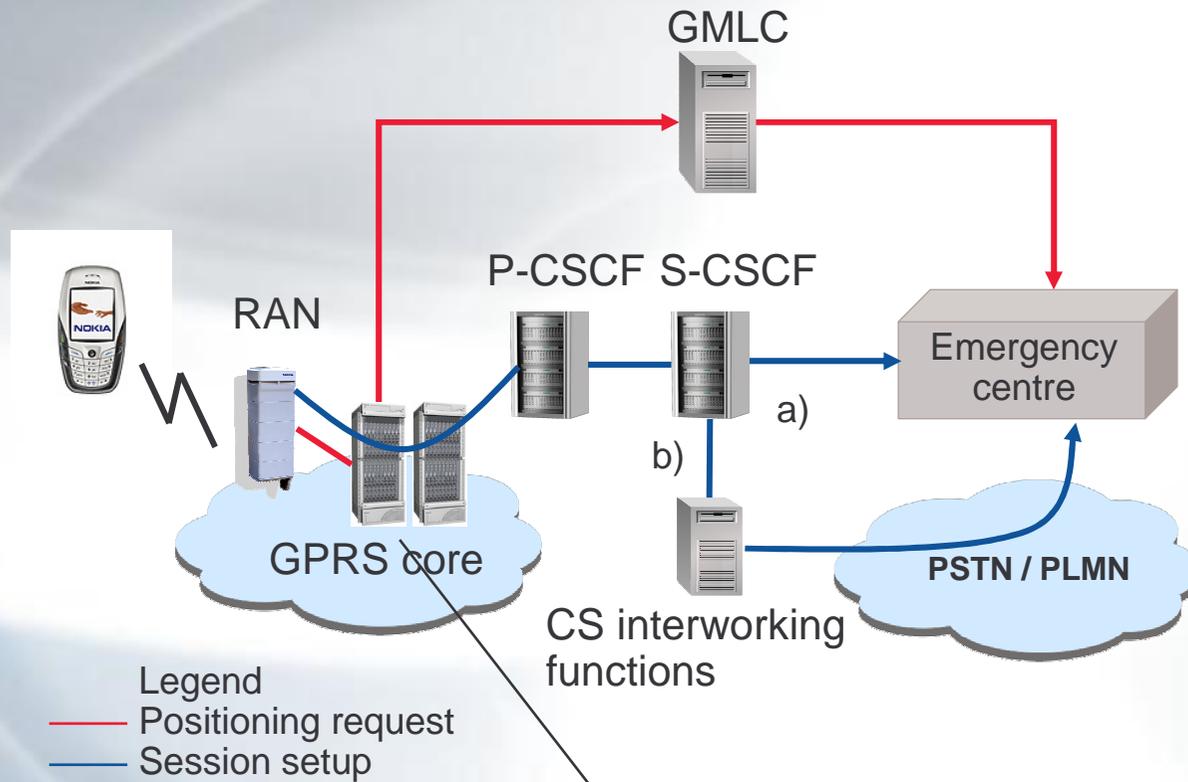
- Federal Communications Commission (FCC), requested already 1994 that mobile radio service providers have to provide caller's location information for emergency service providers.
- E911 First Report and Order (1996) contains two phase approach to an emergency call positioning.
 - In the **phase I** the location of the cell site or base station receiving a 911 call is requested to be delivered to the designated 911 Public Safety Answering Point.
 - In the **phase II**, more accurate automatic location information of a caller is required. The accuracy of the required location information depends on whether a handset-based location technology or Network-based Location Technology is used.
 - For *network-based technologies*: 100 meters for 67 percent of calls, 300 meters for 95 percent of calls
 - For *handset-based technologies*: 50 meters for 67 percent of calls, 150 meters for 95 percent of calls

Emergency call positioning in CS network



- Legend
- Positioning request
 - Session setup

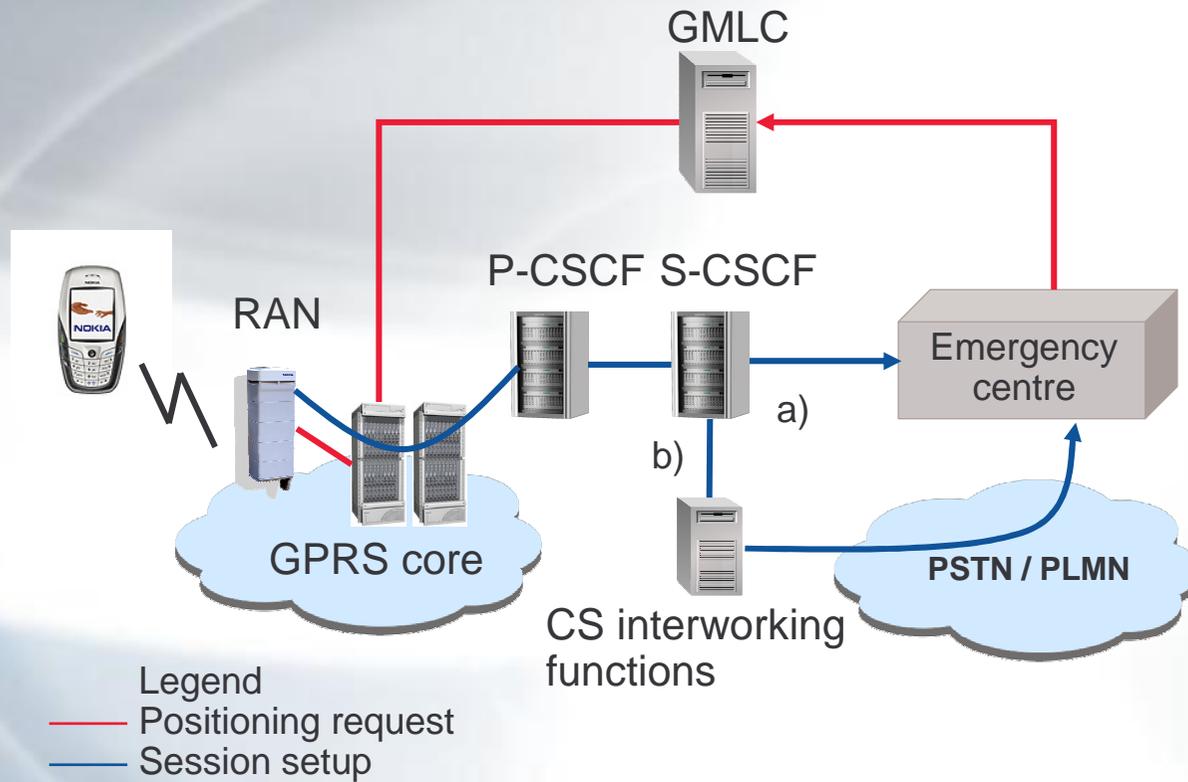
IMS emergency call positioning –push model



When a PDP context for media is activated SGSN initiates location procedures

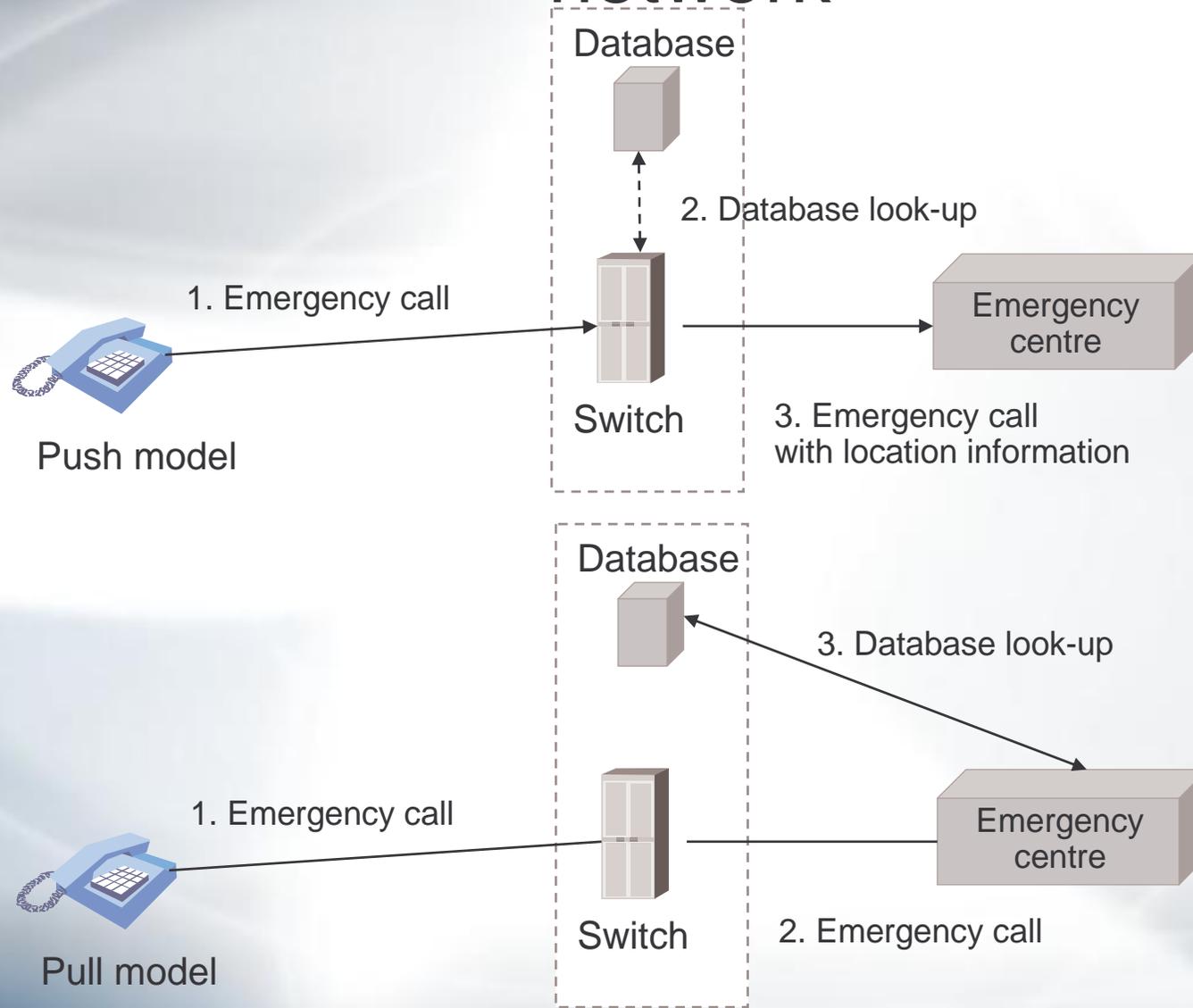
Note: Animated slides

IMS emergency call positioning –pull model



Note: Animated slides

Emergency call positioning in the fixed network



Main impacts to different players

End-user

- technology not visible
- overall safety increases
- may have impact to device price
- may boost location services in general

Operator

- No choice to avoid this requirement
- None revenue generating service
- increases costs in terms of
 - Investment
 - Network usage

Vendor

- Additional implementation efforts
- Country specific implementations may be required
- May boost introduction of GPS enabled terminals

Emergency centre

- Upgrades to emergency centres may in several steps... (pull, push, introduction of IP based technology)