

Hit Gate

User Requirements for an Interoperability Gateway with IMS Core to Integrate Public Safety Communications

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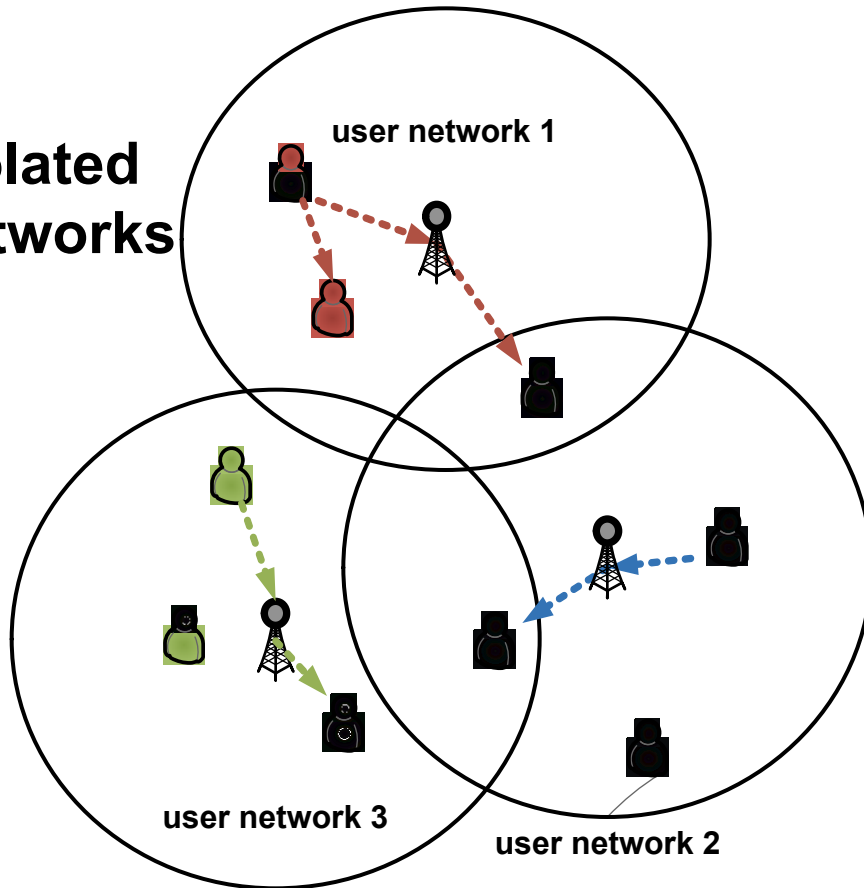
PSCE – Conference
Bucharest



- To develop solutions ensuring interoperability between heterogeneous Radio-communications networks of national security and public order forces
- The proposed solution should:
 - **ensure the connection of all existing communication systems through a dedicated node - gateway interoperability**
 - **ensure interoperability of all systems required during the action without modifying the main terminal or communications infrastructure**

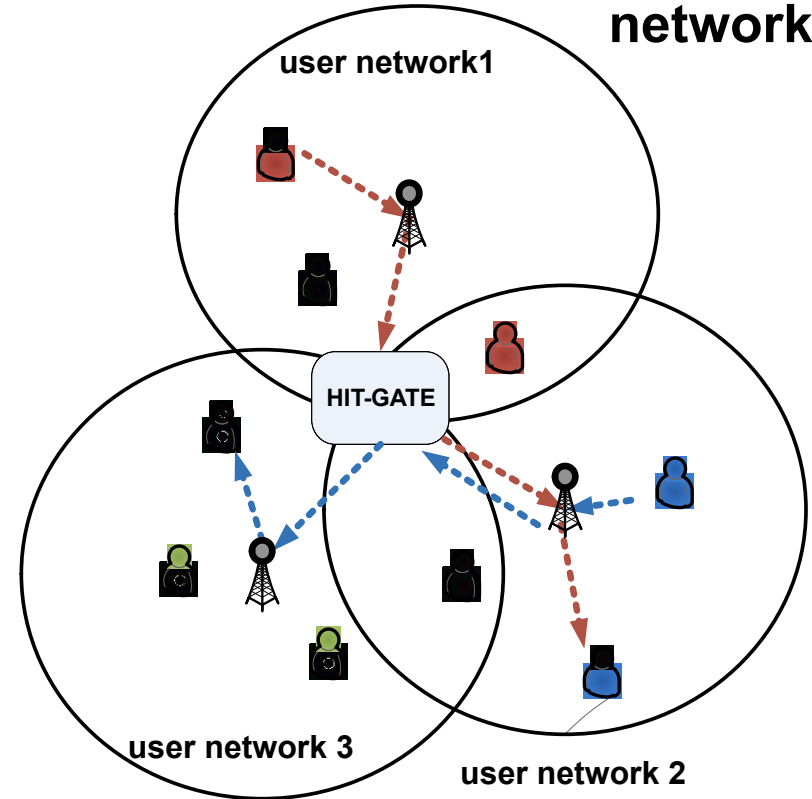
before

Isolated networks



after

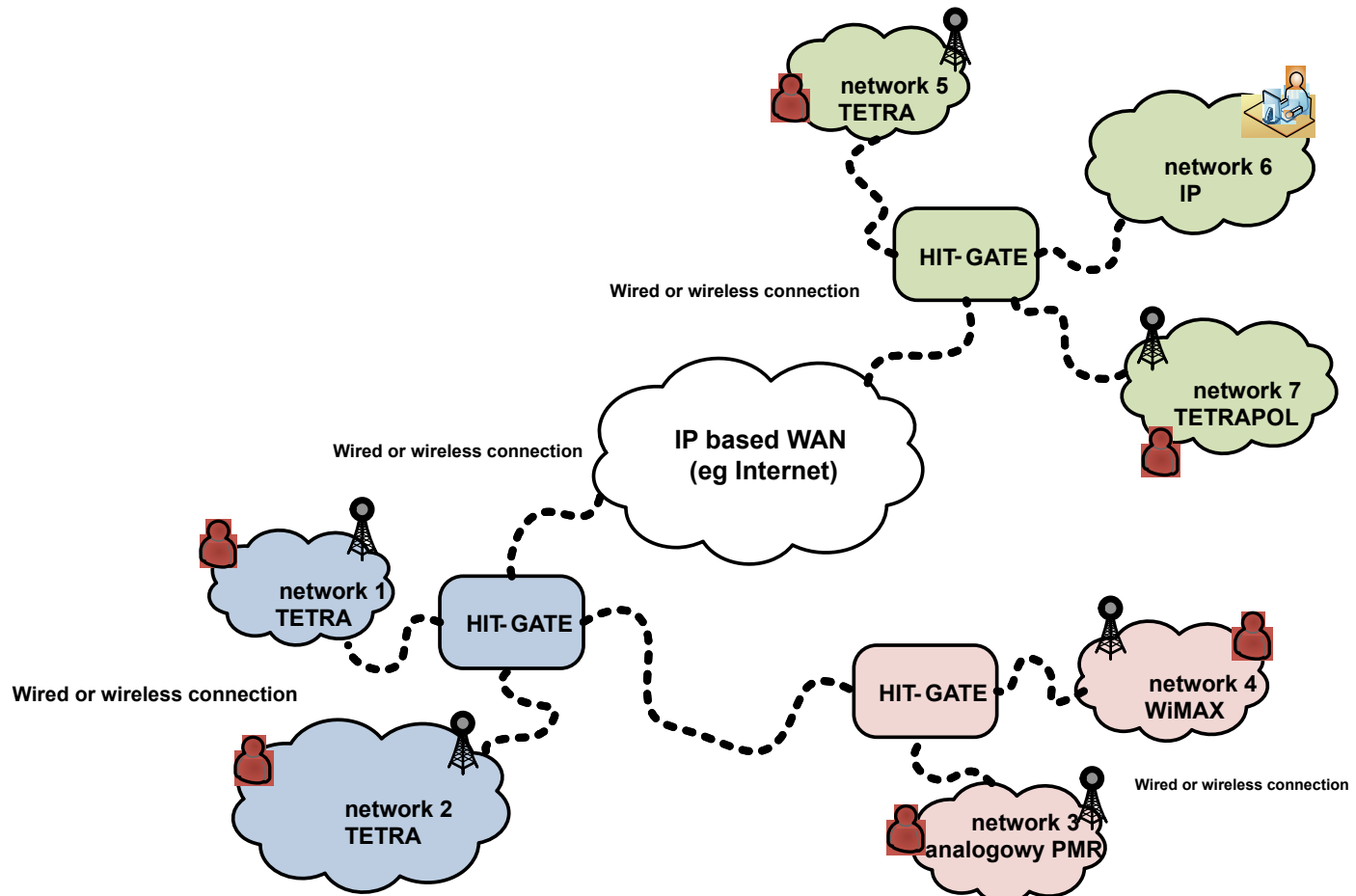
Connected networks

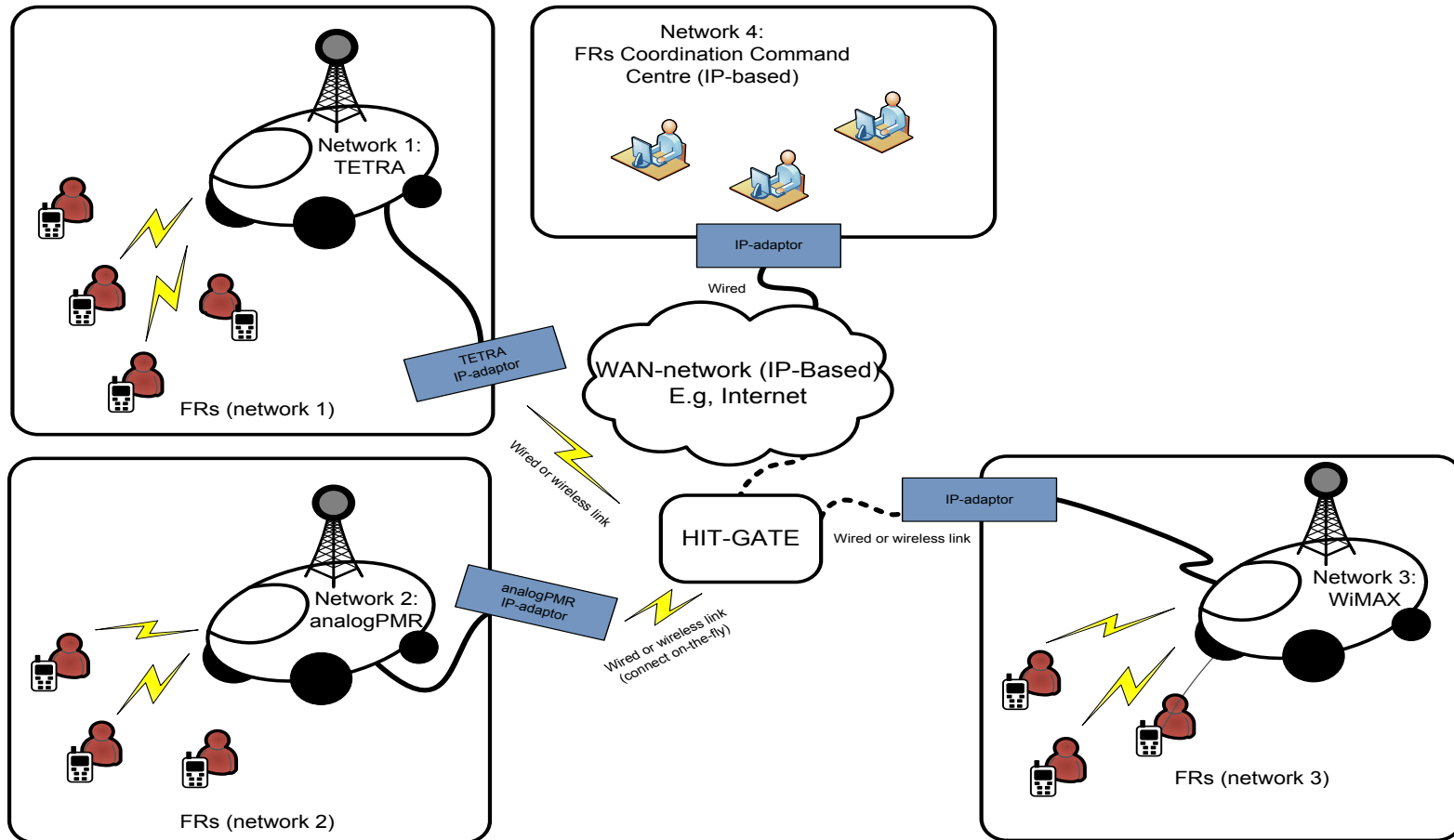


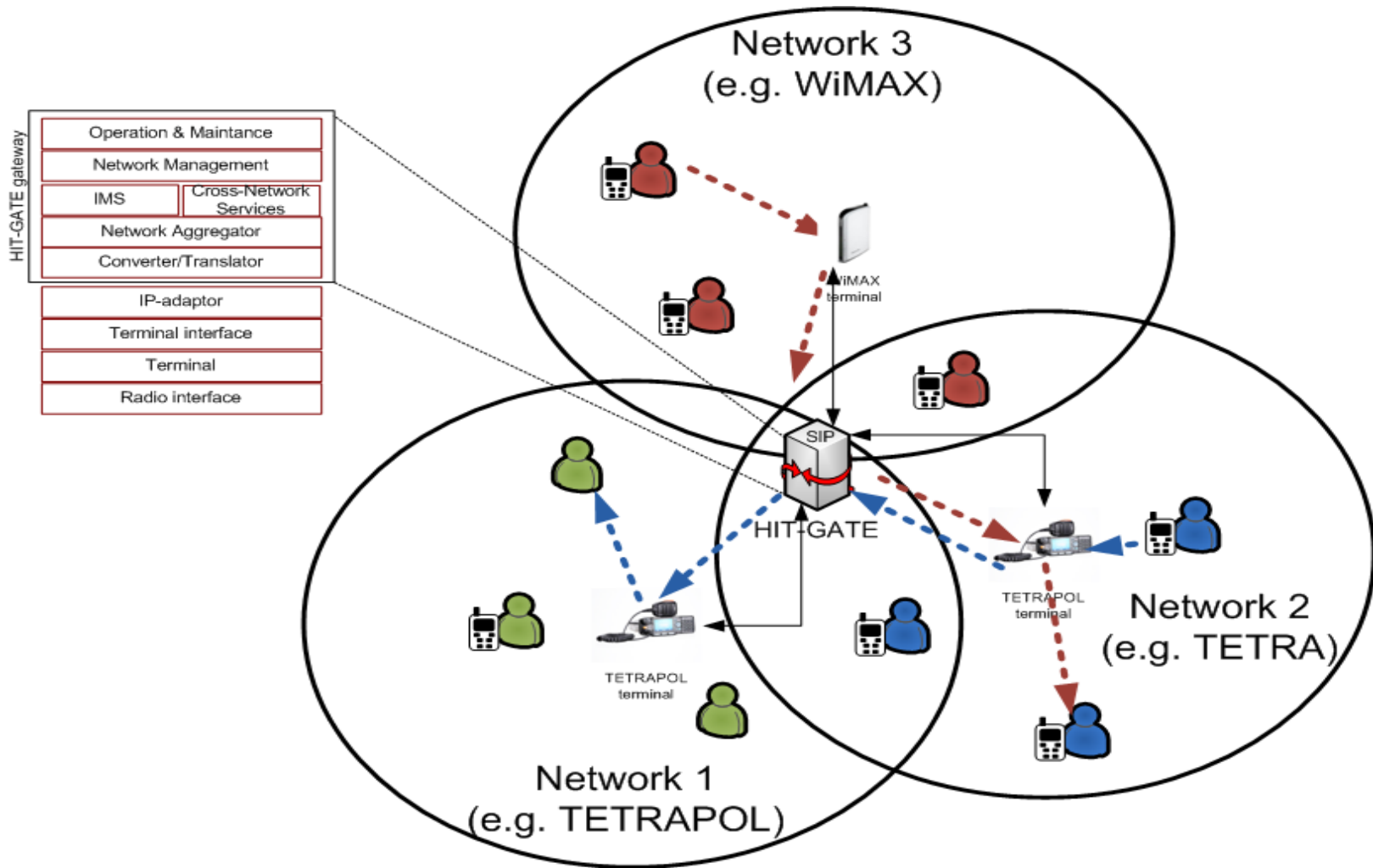
HIT-GATE Implementation

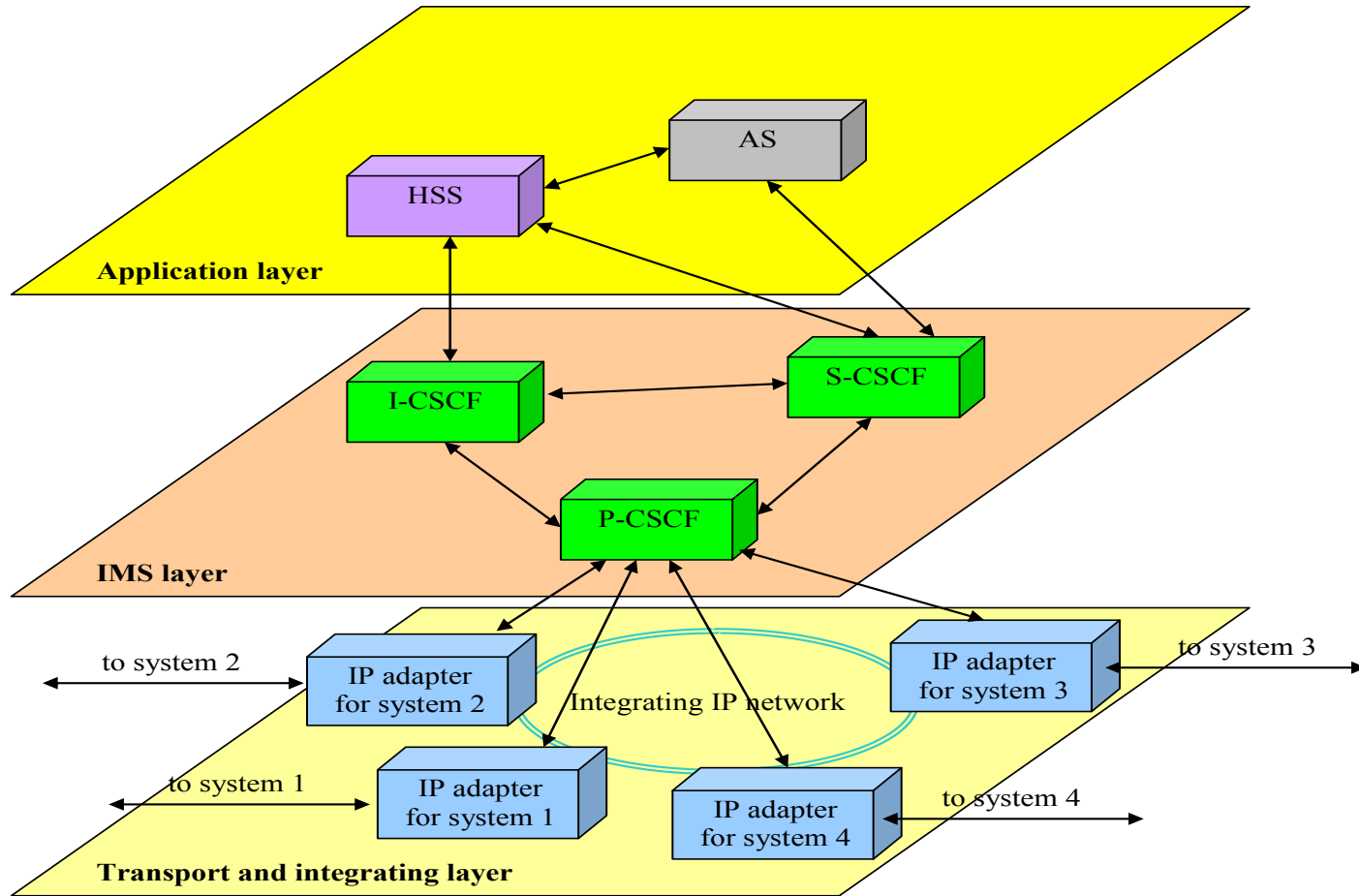


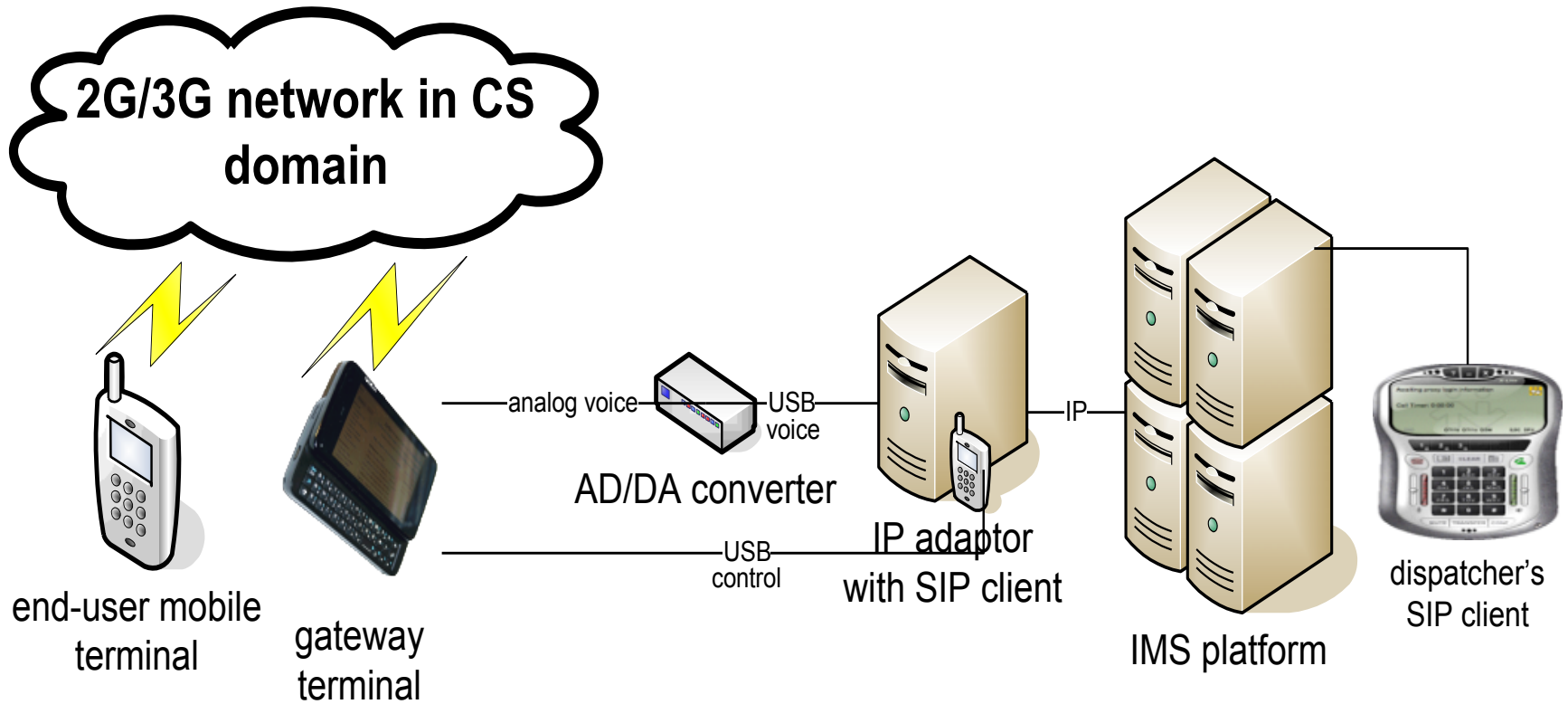
- EDISOFT
- DEMOKRITOS
- KEMEA
- TELETEL
- AMPER
- Cluster TIC Seguridad y Confianza
- THALES CF
- ROHILL
- ITTI
- THYIA
- RINICOM











User Requirements

Methodology

Analysis of questionnaires

Functional requirements

Non-functional requirements

The following approaches to requirement identification were analyzed:

- **VOLERE**
- **Rational Unified Process (RUP) by IBM**
- **IEEE 830 - Recommended Practice for Software Requirements Specifications standard**
- **A Framework for Requirements Engineering Processes proposed by [Louco]**
- **Software Engineering Body of Knowledge (SWEBOK) and its part: Software Requirements Knowledge Area defined by [Sawyer]**
- **Enhanced Telecom Operations Map (eTOM) by TM Forum**

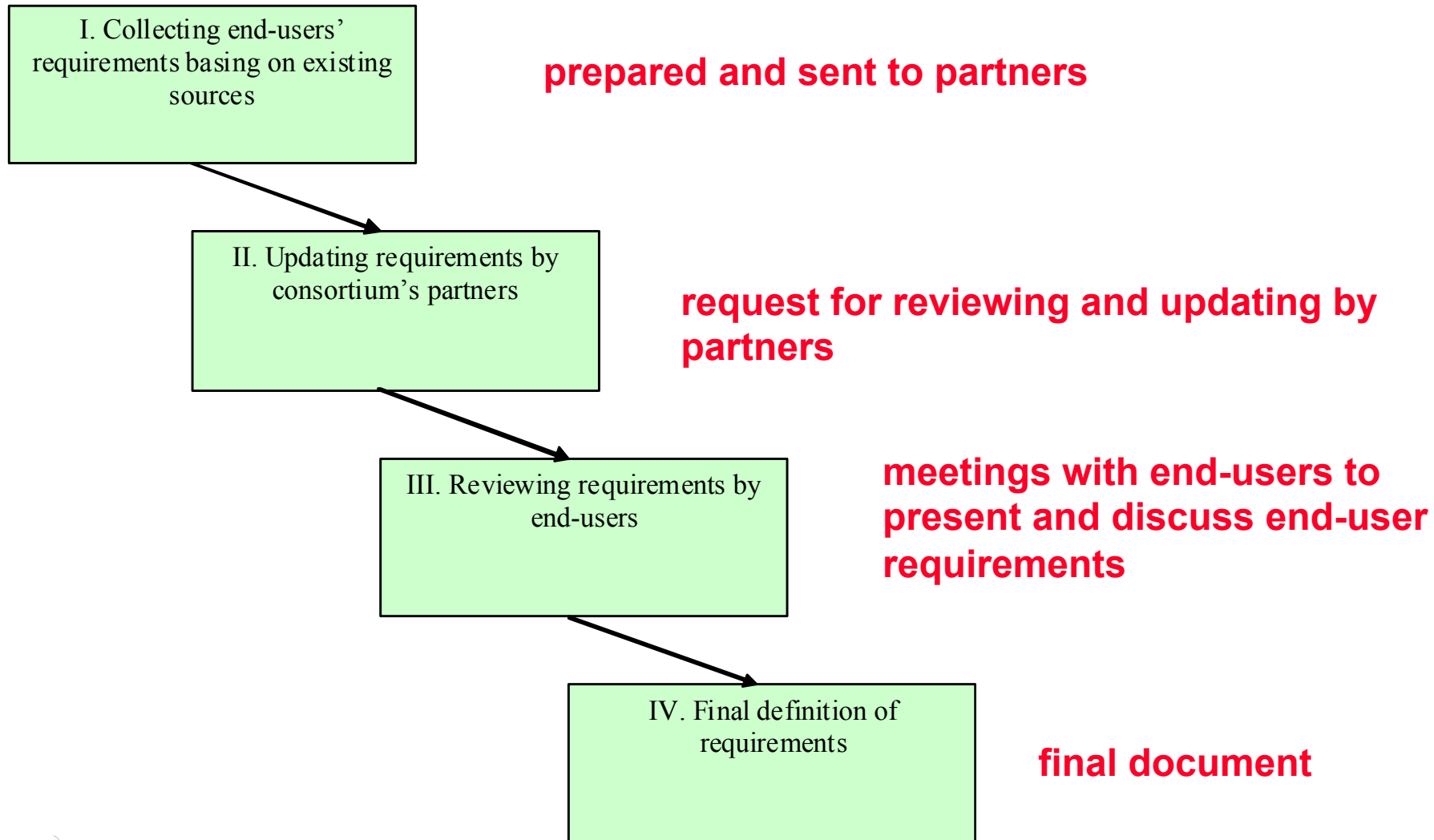
VOLERE was found to be the most appropriate, compared to the other methods

Group of requirements:

- **Communication Requirements**
- **Data Requirements**
- **Usability Requirements**
- **Performance Requirements**
- **Operational Requirements**
- **Security Requirements**
- **Legal Requirements**

Two distinctive areas:

- **functional requirements**
- **non-functional requirements**



➤ entities:

Country	Member End-User (or representative)	Internal End-User	External End-User	(Advisor and Consultant)
			First Responders	Other organizations
GREECE	KEMEA is supervised by the Minister of Citizen Protection that comprises the following agencies: -Hellenic Police, -Fire Corps, -National Intelligence Service, -Coast Guard (including Maritime and Port Facilities Security), -Civil Protection	yes	-Greek Police -Border Guard -Costal Guard -Military -Para-medics	
UNITED KINGDOM	Rinicom		-VIP Protection Unit, Israel -"Future First Responder" Programme, Singapore -Anti-drug agency, Russia	
POLAND	ITTI		-National Police	-Voivodeship Crisis Management Centre -PTPiREE - operator of trunking system for Polish energy sector -ENEA - distribution operator of energy sector
PORTUGAL	EDISOFT		-Civil Protection Service of Cascais	
SPAIN	Cluster of Security of the Regional Government of Madrid	yes	-SAMUR (health assistance) -Guardia Civil (National Civil Guard)	

Communication Requirements

- Communication requirements
- Interoperability requirements
- Services
- Other services requirements

Main items:

- Internal voice communications such as between closed user groups and end-to-end communications, etc.;
- External voice communications with other police forces or emergency services, at local level;
- Group communication;
- Emergency calls to the number 112;
- Calls for end user's PABX network;
- Call recording in dispatching communication system;
- Capability of assigning priorities to the individual users and type of connection;
- Capability of connection queuing

Data Requirements

Main items:

- Data access to radio channel;
- Data access for querying own or others databases;
- Data transmission for decision making;
- Data exchange between different first responders;
- Image transmission if possible;
- Video transmission if possible;
- Metadata transmission for smart surveillance

Usability Requirements

- Ease of use requirements
- Cost requirements
- Mobility requirements
- Transportability

Performance Requirements

- Quality
- Set-up and latency requirements
- Availability requirements
- Scalability requirements
- Robustness or fault-tolerance requirements
- Resource management requirements

Operational Requirements

- General requirements
- Communication spectrum requirements
- Broadband connectivity requirements

Security Requirements

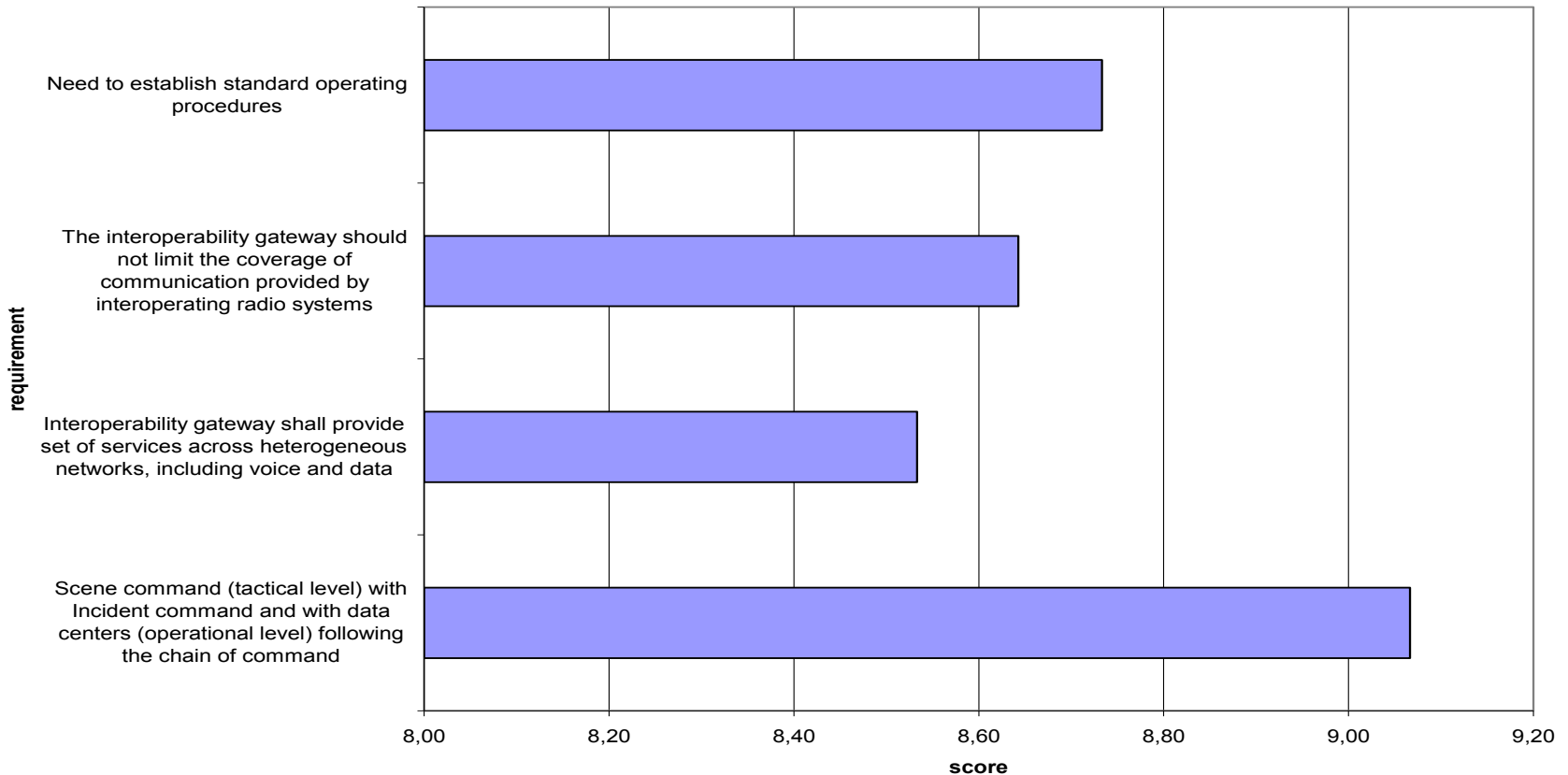
- General requirements
- Resilience requirements
- Access control and authentication requirements
- Data confidentiality requirements
- Data integrity requirements
- Non-repudiation requirements

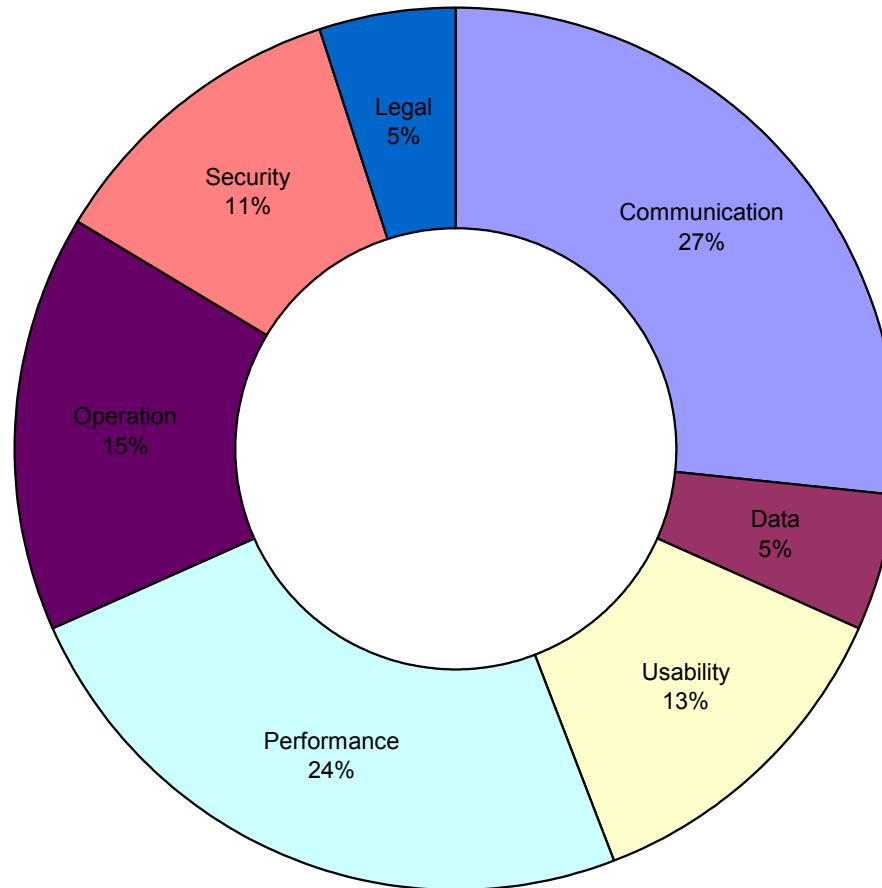
Legal Requirements

- General requirements
- Compliance with standards requirements

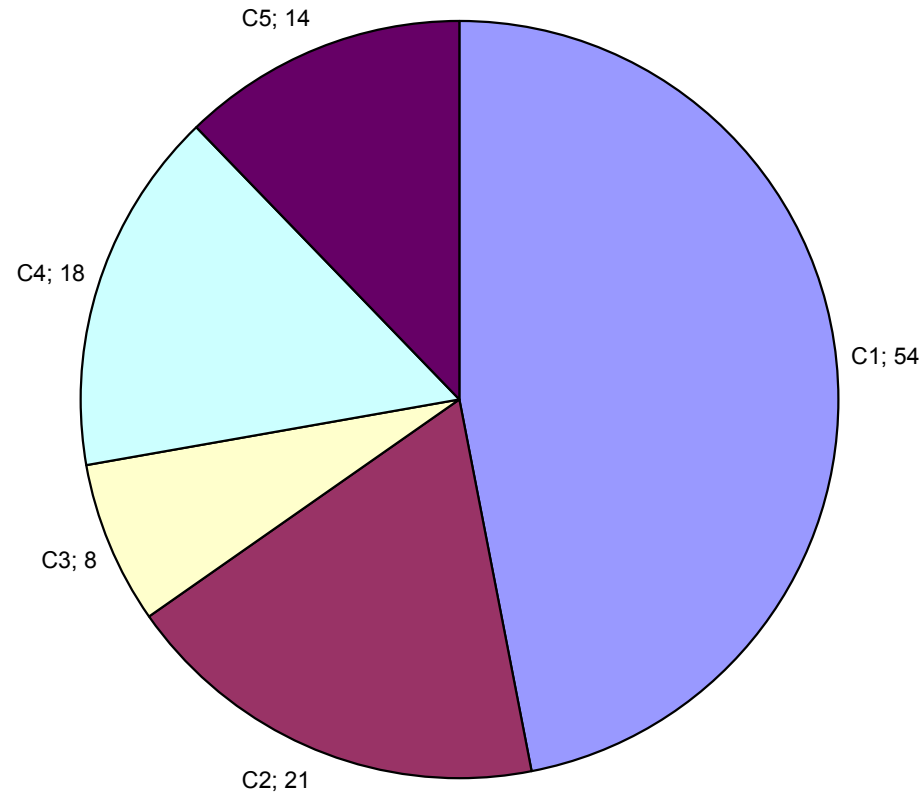
➤ **Priorities were assigned by end-users**

The most important requirements:





- **C1. Communication services and performances requirements**
- **C2. Mobility and connectivity requirements**
- **C3. Interoperability requirements**
- **C4. Security and safety (i.e. confidentiality, availability, integrity) requirements**
- **C5. Management as well as monitoring needs requirements**



Thank you

