Public Safety Radio communication in Europe

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Helpen Nederland veiliger te maken

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Why C2000

Cooperation between public safety users

Bijlmerramp (El-Al Airplane)
Enschede (Firework industry)
Volendam (Fire in a local pub)
Euro2000

Cooperation between countries

Schengen
Catastrophies (3-Country Pilot)

→ ***Change from Mono user systems to Multi user system***

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Why Tetra

Central questions

Open Standard or Supplier solution

- In practice only Tetra (France Tetrapol)

Professional or Commercial System

- Tetra No countries with GSM
- Last 15 years *NO* European countries with an other choise than Tetra

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Why Tetra

Advantages

- Groupcommunication
- Fast call set up
- Flexible fleetmaps
- Security
- Speech quality (noisy situations)
- Open standard → multi vendor
    - → Lower prices
    - → More choice
    - → Future proof
    - → Schengen agreement

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Why Tetra

Central questions

Which frequency

- ✓380-400 MHz (NATO)
- ✓ Alternatives: none in Europe

Private network or Public network

- ✓Government Owned-Government Operated (GO-GO)
- ✓ Alternatives: Go-Co and Co-Co

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TETRA History

Early 1990s – Proposal to ETSI

- Initially for shared (commercial) use
- Later to include Public Safety user needs
- In practice dominated by Schengen requirements

Mobile Digital Trunked Radio System (MDTRS)
TErrestrial Trunked Radio (TETRA)

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90's: DEVELOPMENTS AT THE POLICE

Schengen Art. 44

- **Short term solution**
- **Long term solution**
  → Harmonized frequency band: 380 – 400 MHz
  → Harmonized technology
  → Need for a standard: TETRA

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SCHENGEN LONG TERM

Harmonised frequency band

- NATO 380 - 400 MHz band
- Coordination concrete allocations
- AGA + DMO

Success story because

- cooperation possible
  - cross border
  - within a country
- frequency coordination more direct
- migration easier

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THE PASS TO UNIFORM TECHNOLOGY IN EUROPE

- 1990 Article 44 Schengen demands an uniform technology
- 1992 Maastricht (TREVI Art. 14)
- Schengen catalogue 1992 and 1995/1996
- 1996 Three country project (Germany, The Netherlands and Belgium)
- Individual projects based on the harmonised frequencies + standard

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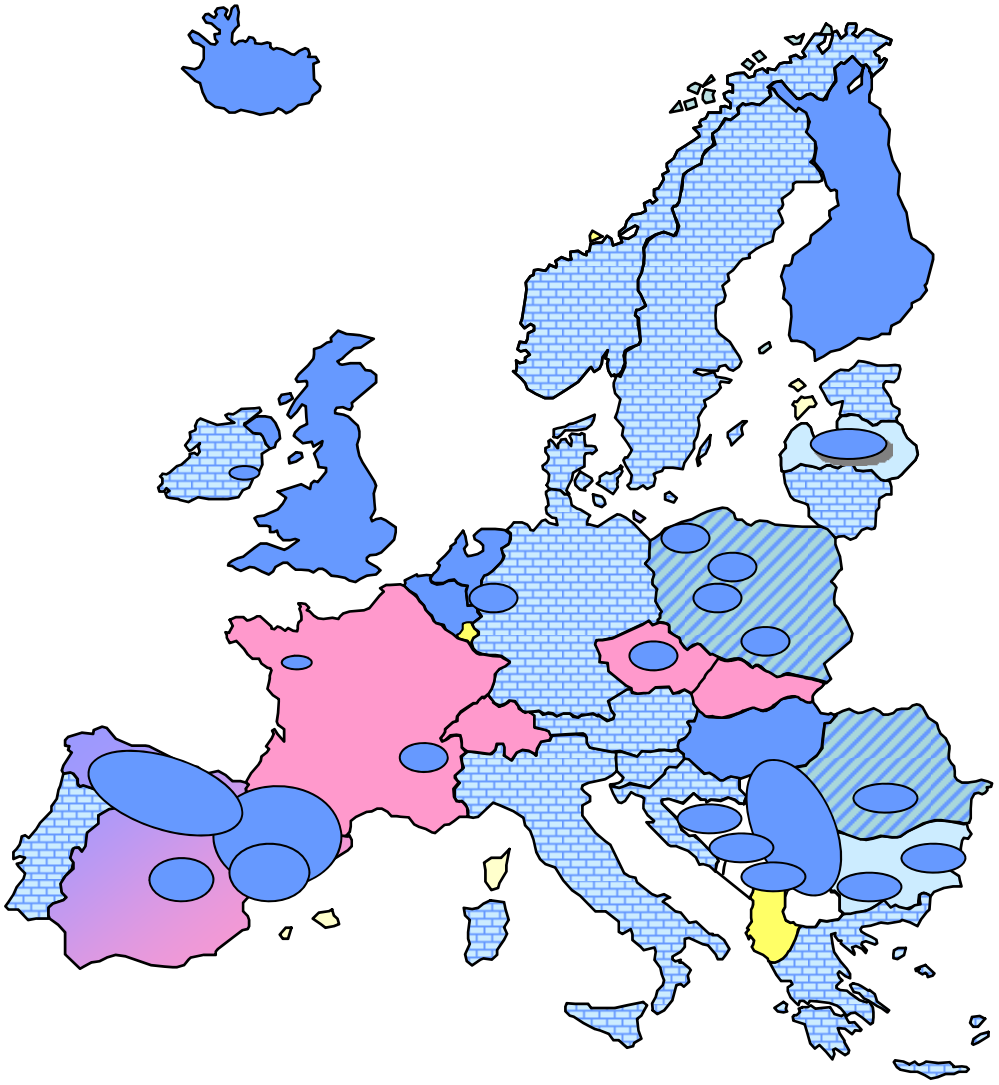
Official rules in Schengen

GENERAL SECRETARIAT
DG-H COUNCIL OF THE EUROPEAN UNION
EU Schengen Catalogue

11.2. Long term measures
- Schengen States shall implement national digital radiocommunications networks for their emergency services,
- in the harmonised frequency band of 380 – 400 MHz.
- The networks shall be based on TETRA or TETRAPOL systems,

European Public Safety Networks

Key	
Nationwide TETRA	
Regional TETRA	
Nationwide TETRA under construction	
Project in progress likely to be TETRA	
Other technologies	
No project known	



Bundesministerium des Innern

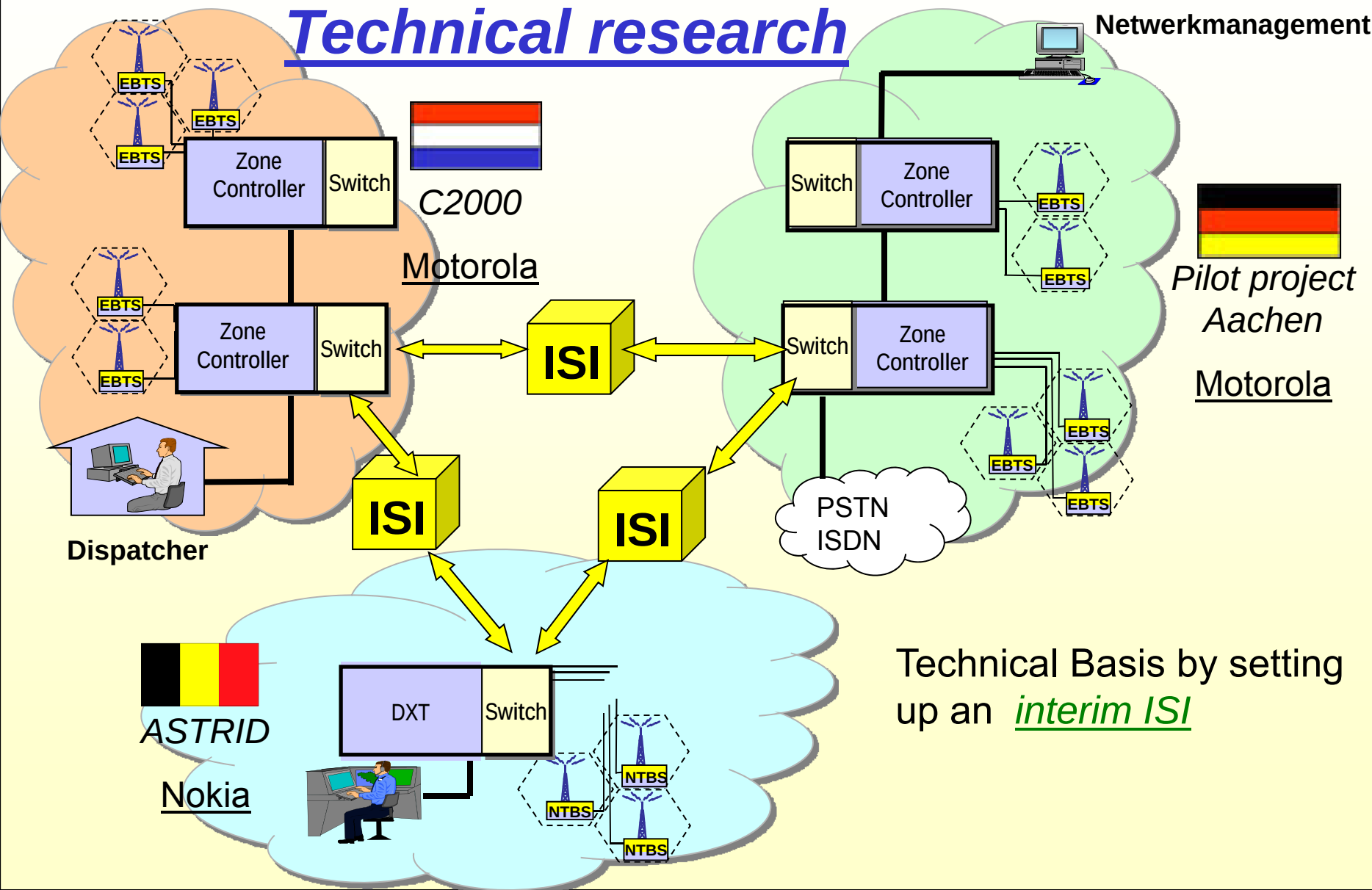
Three-Country Pilot

Aachen – Luik (Liège) – Maastricht

Bundesministerium des Innern

Three-Country Pilot
Aachen – Luik (Liège) – Maastricht

Technical research



Technical Basis by setting up an *interim ISI*

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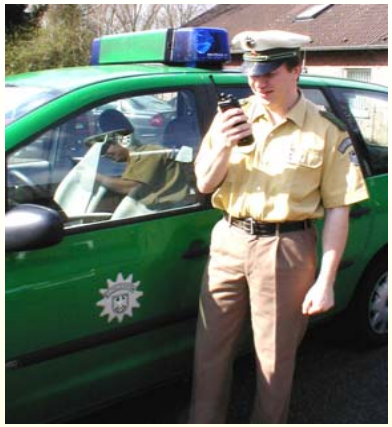

Operational Research

was applied during the operational field trials.

The goal was to detect as many instructive elements as possible.

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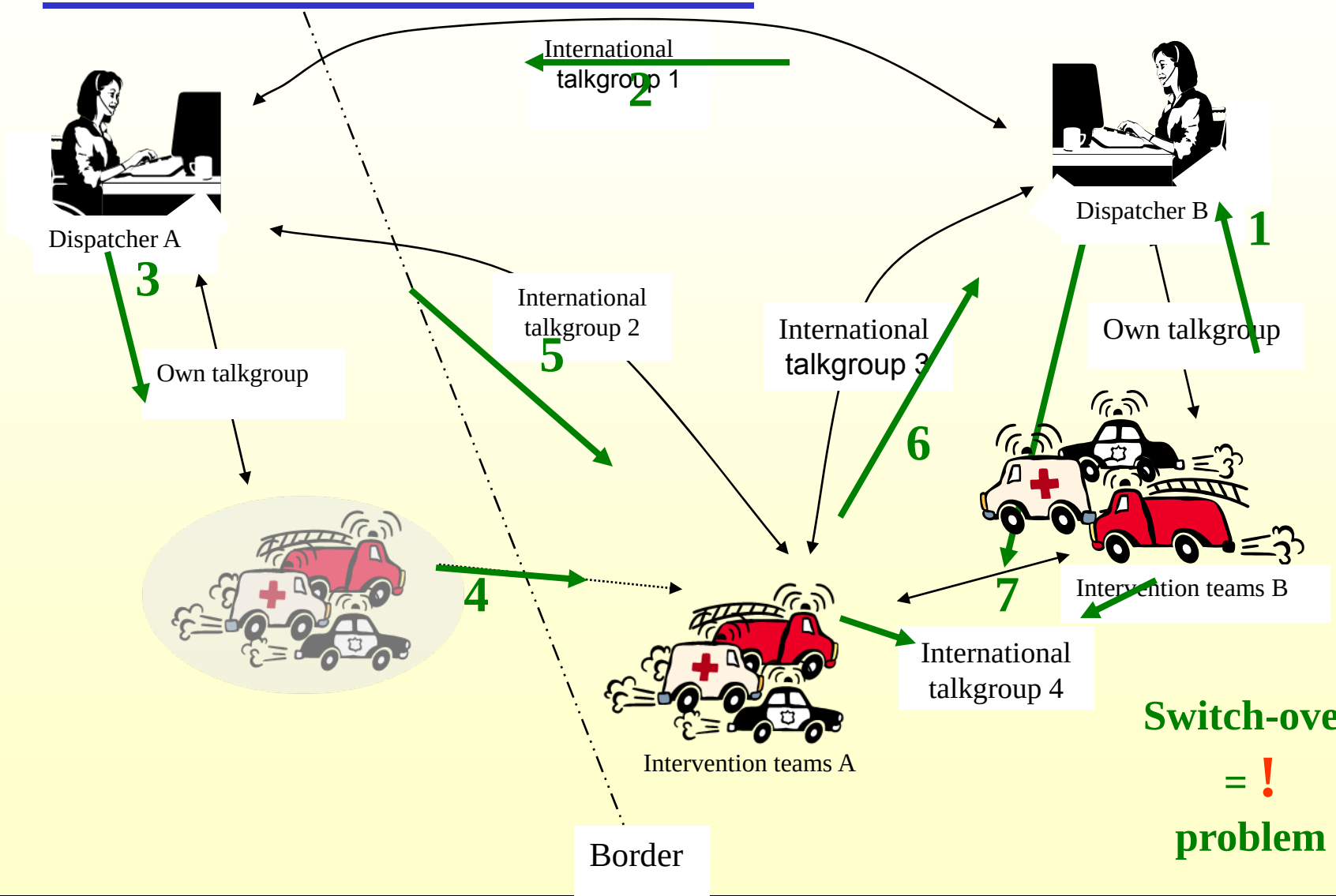
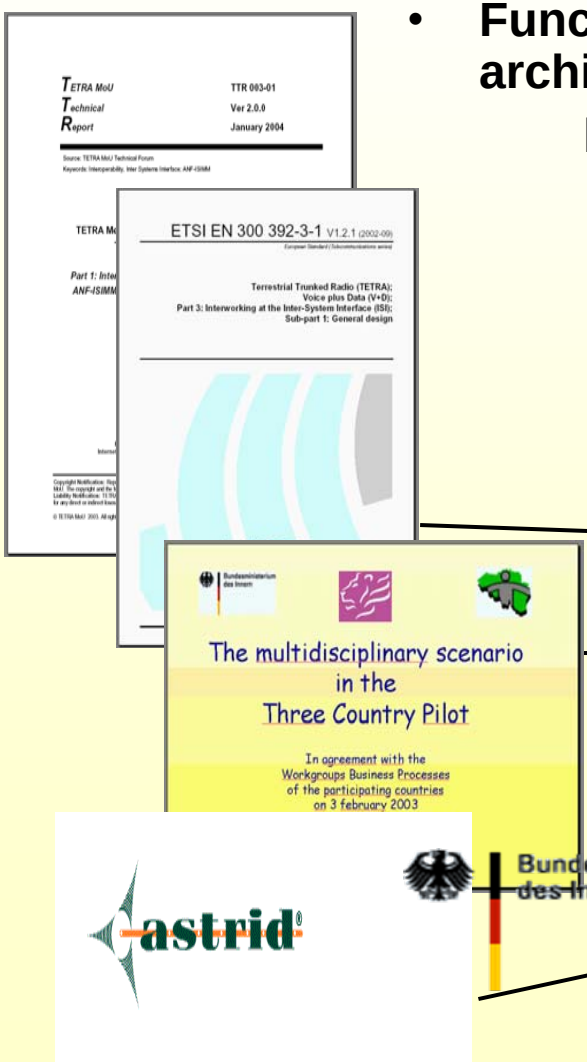
Communication standard



Switch-over = ! problem

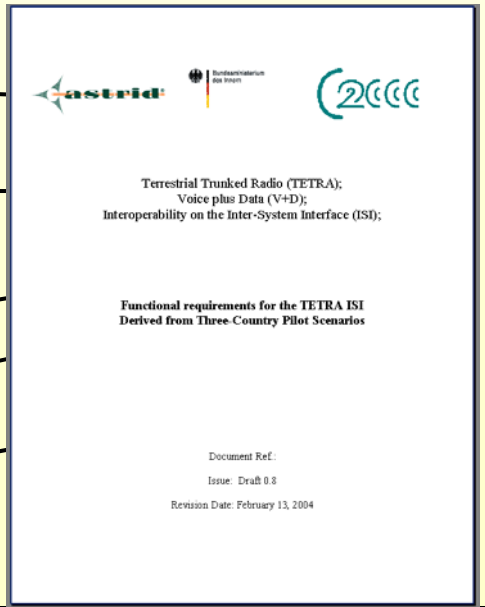
Functional requirements for the TETRA ISI



- **Functional requirement specification describing architecture, functions and functionality**

  Based on:

  - Technical TETRA ISI standard and Interoperability profiles
  - Three-Country Pilot scenarios and recommendations
  - ASTRID, BMI and C2000 view



Three-Country Pilot

Aachen – Luik (Liège) – Maastricht

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Version
04.09.2003

Content overview

Also ETSI reference TR 101448

- How to interconnect the networks
- Performance requirements
- Subscriber management aspects
  - Subscriber rights and access to groups
  - Based on Three-Country Pilot experiences
- End-user functionality
  - Based on Three-Country Pilot scenarios
- Security aspects
- Phasing of implementation
  - Based on Three-Country Pilot scenarios

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Council - COMIX recommendation

COUNCIL OF THE EUROPEAN UNION
Brussels, 20 May 2009
10141/09
ENFOPOL 143 TELECOM 116 COMIX 421

From : General Secretariat
To : COREPER/Council
Subject : Draft Council Recommendation on improving radio communication between operational units in border areas

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Police Cooperation Council

Expert group on radio technology + frequencies

Task: 1) medium term solution interoperability

Tetra-Tetra +
Tetrapol-Tetrapol +
Tetra-Tetrapol

2) long term solution mobile broadband data

Harmonised technical standard

Harmonised frequency band

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Council - COMIX recommendation

Effective cross-border cooperation requires **adequate communication capabilities including interoperable radio communication systems** in border areas and between operational services from different Member States

In the long term, law-enforcement and public-safety radio communication systems will need to support and to be able to **exchange high-speed mobile data information**; current law-enforcement, public-safety and **public networks may not be able to support this**

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Council - COMIX recommendation

That Member States establish a group of experts to examine the issues involved in the **development of intersystem interfaces**, including **cost and funding opportunities**

Intersystem interfaces be **developed, and encourages the European Commission to provide funding for them**

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Council - COMIX recommendation

RECOMMENDS that

The Electronic Communication Committee (CEPT / ECC) be tasked to study the possibility of **obtaining sufficient additional frequency allocation** below 1GHz for the development of future law-enforcement and public-safety voice and high-speed data networks

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Council - COMIX recommendation

RECOMMENDS that

European standardisation bodies be invited to start producing **a European standard** satisfying law-enforcement and public-safety services' operational requirements regarding **high-speed data communication** and roaming functionality in the medium term

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West Balkan countries

Joined project on cross border control

Radio communication is essential

They adopt the West European model

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Thank you for your attention

Questions?