



## **Integrated Risk Management for Africa IRMA concepts and objectives**

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## **Partners**

### **EU**

- Luxemburg University (LU)
- Centre de Communication du gouvernement (LU)
- Cisco Systems International B.V (NL)
- Thales Alenia Space (FR)
- Spacebel SA (BE)
- SES-ASTRA TECHCOM (LU)
- Tilburg university (NL)
- Renater (FR)
- Technologies sans Frontières (LU)

### **Africa**

- Council for Scientific and Industrial Research (ZA)
- Centre de suivi ecologique (SN)
- Polytechnique Yaoundé (Cameroun)
- Centre Royal de Teledetection Spatiale (MA)
- Institut National des Postes et Télécommunication (MA)
- Unidade Técnica de Implementação da Política de Informática (MZ)

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## Policy environment development policy

- EU Strategy for Disaster Risk Reduction in Developing Countries (in preparation)
  - Contribute to sustainable development by reducing the burden of disaster in the most vulnerable countries
  - DRR need to be integrated into development and humanitarian policies and into crisis response
    - Primacy of national ownership
    - Subsidiarity principle
    - Link with climate change
    - Ensure broad stakeholders participation
  - Areas of intervention
    - Develop and strengthen DRR institutions
    - Enhance public awareness
    - Reduce vulnerabilities, city/regional planning

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## Policy environment 2 environmental policy

- INSPIRE lays down **general rules** to establish an infrastructure for spatial information in Europe for the purposes of Community environmental policies and policies or activities which may have an impact on the environment
  - Spatial data held by or on behalf of a public authority
  - INSPIRE covers 34 Spatial Data Themes (*required to successfully build environmental information systems*)
- INSPIRE Components
  - Interoperability of spatial data sets and services
  - Network services (discovery, view, download, invoke)
  - Data and Service sharing (policy)
  - Coordination and measures for Monitoring & Reporting

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## Policy environment 3 ICT and R&D policy

- **Advancing the internet**
  - Action plan for the deployment of IPv6
  - Africa is running out of IPv4 addresses
  - Extension of GEANT to Africa in the pipeline
- **Validation of the SICA approach to international cooperation**
  - IRMA will be closely monitored by policy makers
- **GMES/GEOSS**
  - IRMA should be able to integrate upcoming GMES services

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## IRMA concepts and objectives

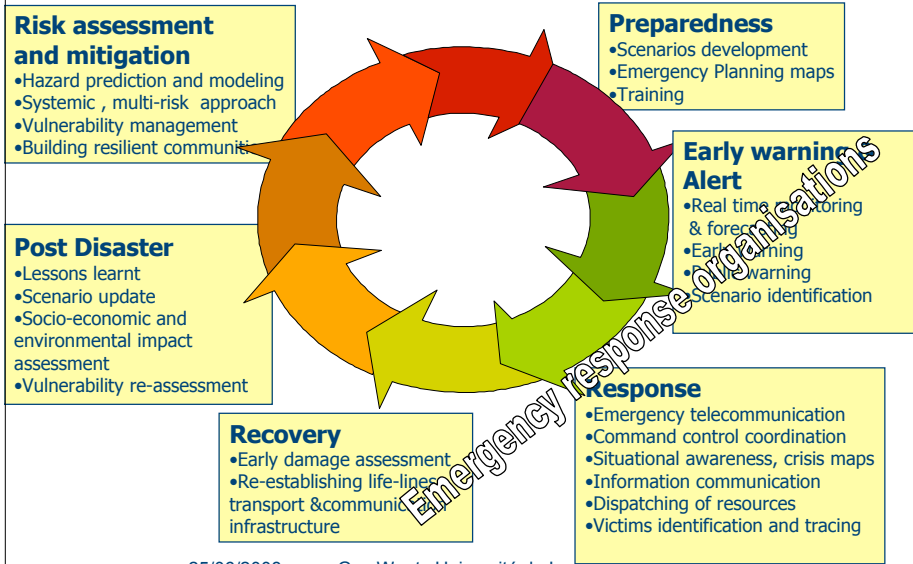
- **Disaster risk reduction platform for African countries**
  - **To be Integrated into partner countries development policies**
  - **Making the best use of existing infrastructure**
  - **Low cost solutions with high replication potential**
  - **Multi risks approach ( flood, fire, drought, urban etc.)**
  - **Capacity to deal with complex emergencies (natural disaster combined with humanitarian crises)**
  - **Full scale demonstration with end-users in SN, CA, MZ**
  - **Functional multi risks demonstration in MA and ZA**

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# Full risk management cycle

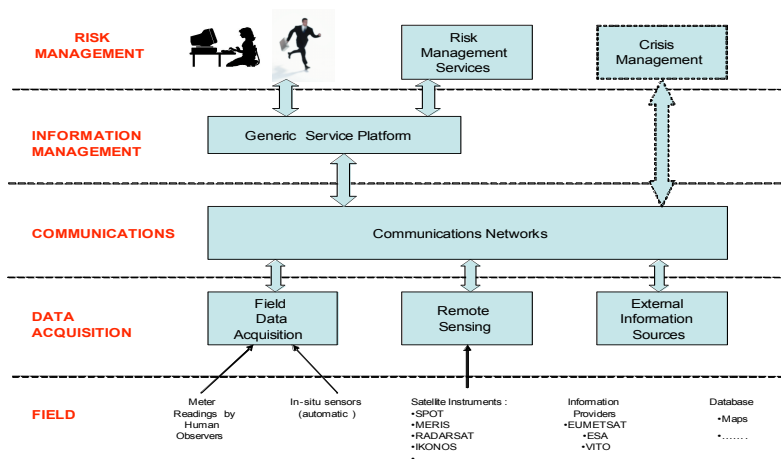


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# IRMA functional structure

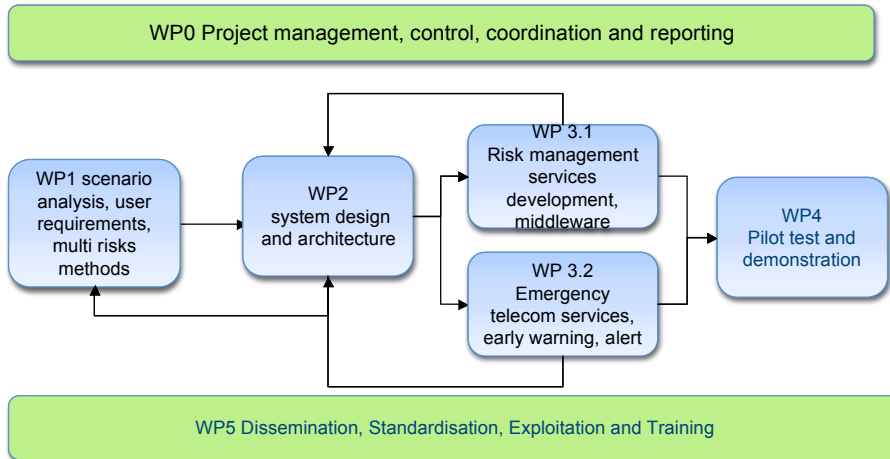


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## IRMA WP structure



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## IRMA Public Safety Communications

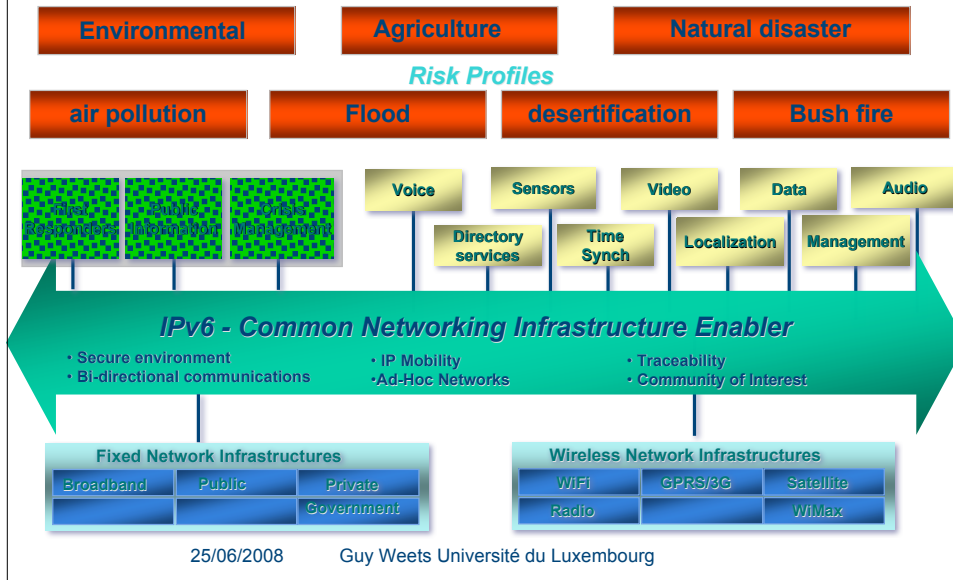
- PSC is THE critical infrastructure in DRR
  - In Europe it is dominated by proprietary products
  - Africa is looking for low cost solutions
- PSC functional requirements
  - End to end network security
  - Seamless integration of mobile networks
  - Quality of Service for first responders
  - Simple network management
  - Group communication
- All IPv6 solution for:
  - Early warning – sensor networks
  - Alert making use of all possible media
  - Rapidly deployable ad-hoc meshed network WiFi/ Wimax based
  - Victim identification and tracking using RFID
  - Network management
  - Etc.

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## IRMA telecom architecture



## Benefits of IPv6 approach

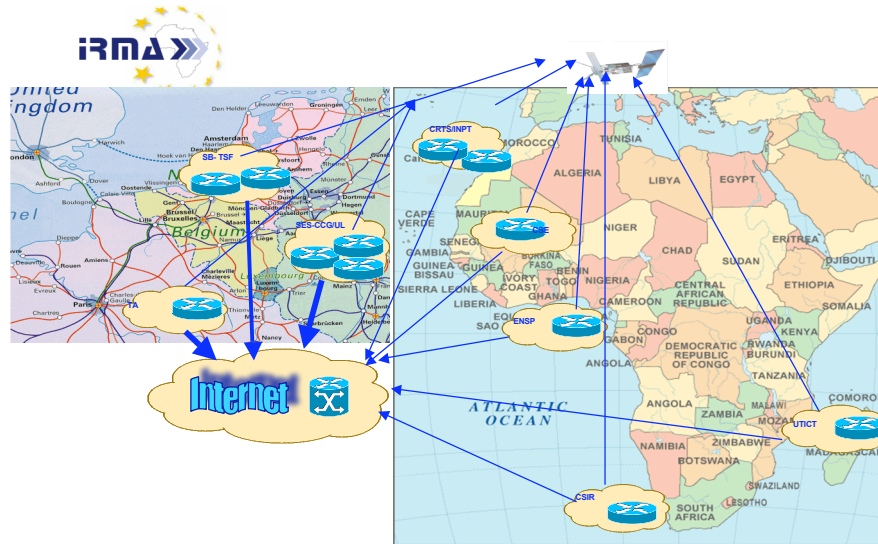
- Cost savings in deployment of public safety networks
  - Use of Commercial Off The Shelf products (COTS)
  - Proliferation of innovative safety products (networked RFID, Sensors)
  - Interoperable IP capable networks nation-wide
  - Common open standards communication protocol to support
    - multiple wireless networks configuration and integration: sensor networks, meshed ad-hoc networks, internet etc.
- Longer term benefits to other public network users
  - Enablement of Trusted End-to-End IP based Network Security
  - Enablement of IP based Network Management
  - Enablement of IP based Seamless Network and Node Mobility
  - Enablement of Next Generation Network Application Services to Users
- Building resilience into public network is the most effective way to implement reliable PSC
  - Native IPv6 is potentially more resilient than IPv4 networks using multiple NAT

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## IRMA communication network



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## Conclusion

- IPv6 and GIS are the key technology enabler in IRMA
- Africa has no choice but implement IPv6
- Spatial data infrastructure is a key element for the implementation of coherent development policies
- Africa is the perfect testbed since there are fewer legacies to deal with.
- It will lead to the integration of DRR into development strategy.

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