Communication needs during crisis

Jim Strother, Shaun O'Neill, Jan Zych, Wojciech Wojciechowicz

Crisis Management structure

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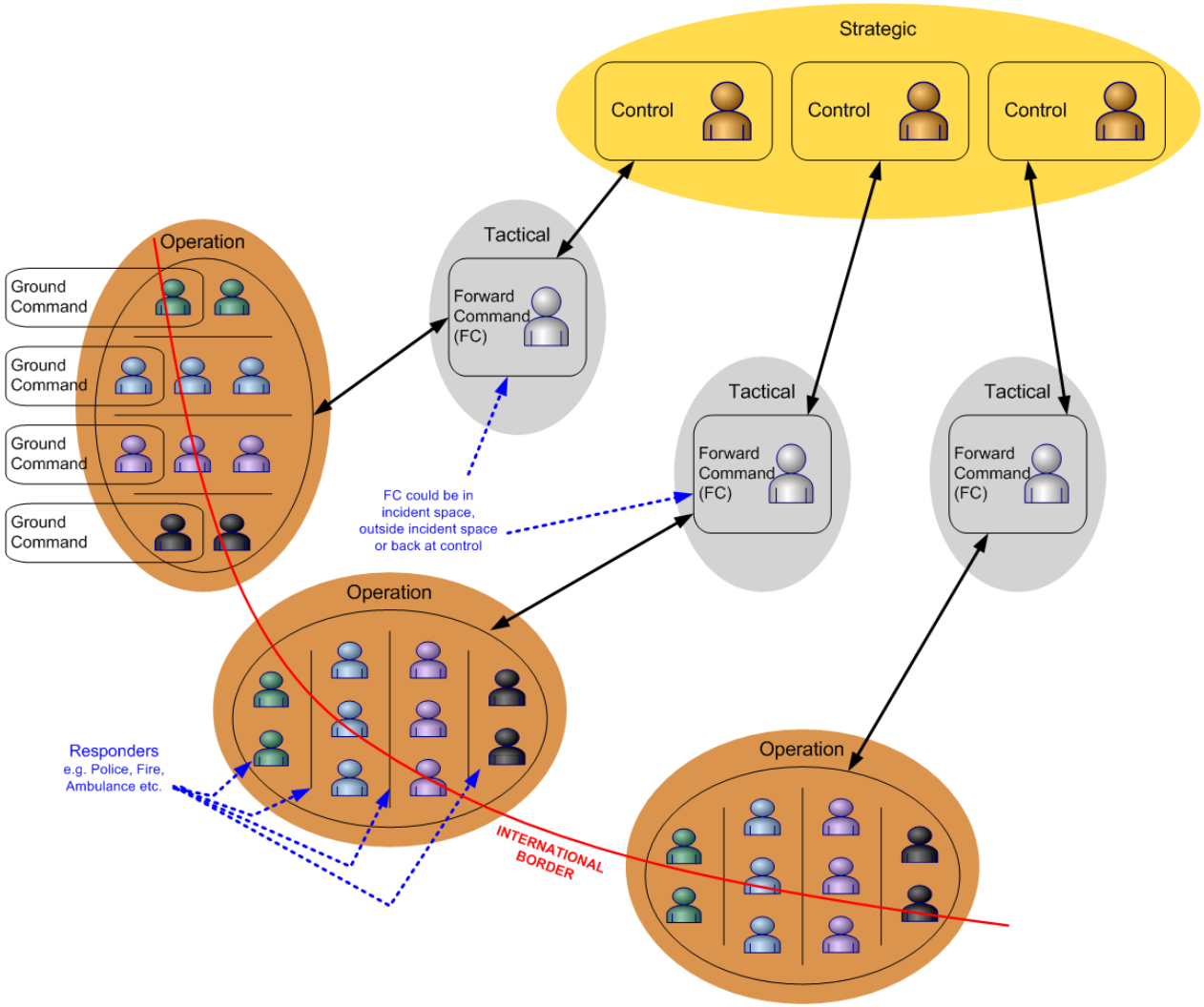

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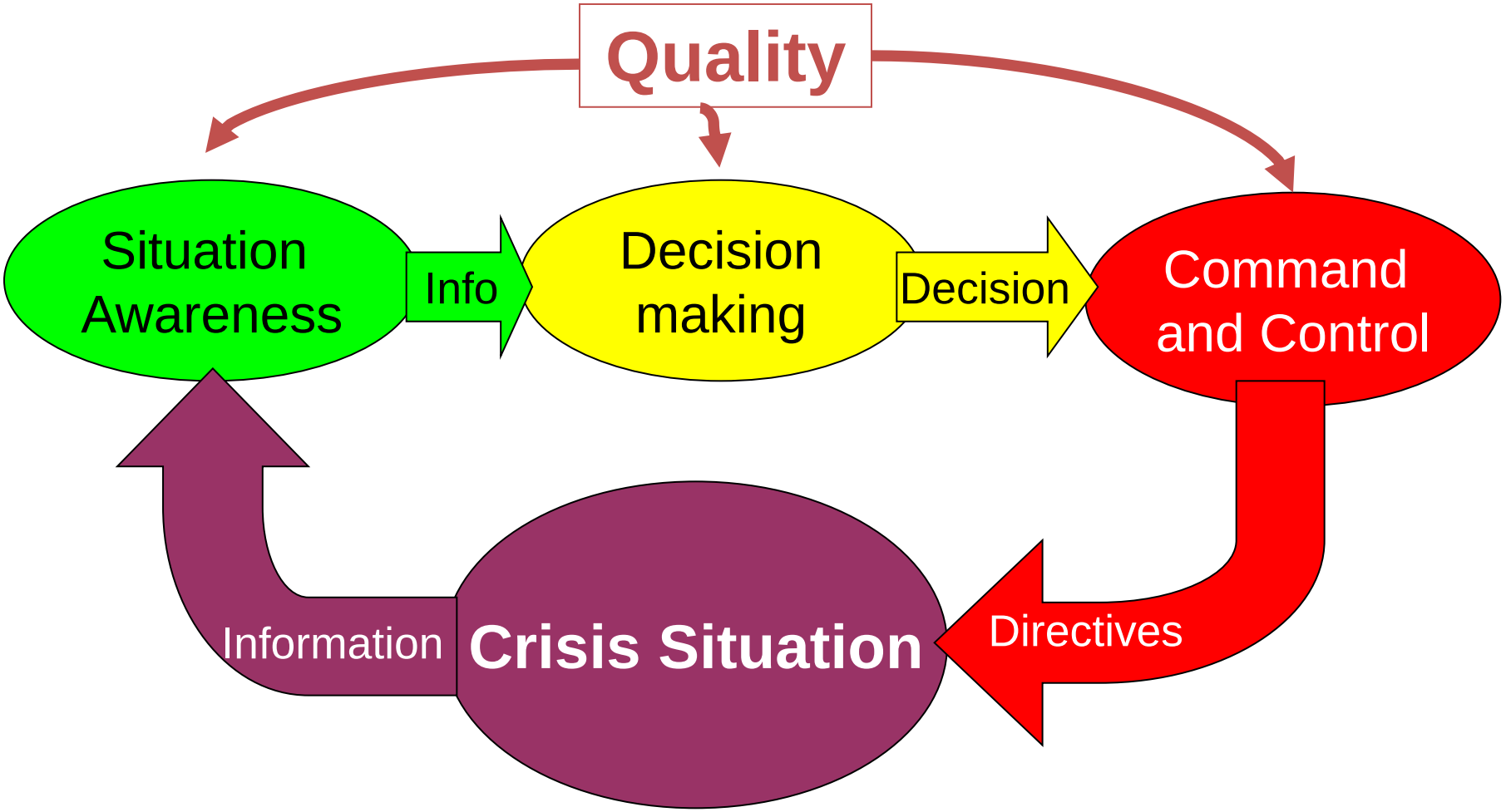
Principle of Crisis Management



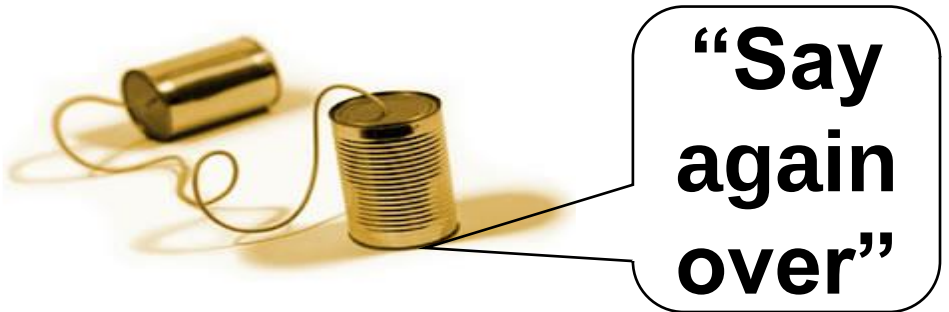
Capability Gap Analysis

SECRICOM aims to mitigate key capability gaps faced by users of existing systems

Why do we need to define the gap?

- Define scope and priorities for SECRICOM
- Provides focus for demonstration

So, how do you compare user requirements against existing infrastructure……?



Project Approach

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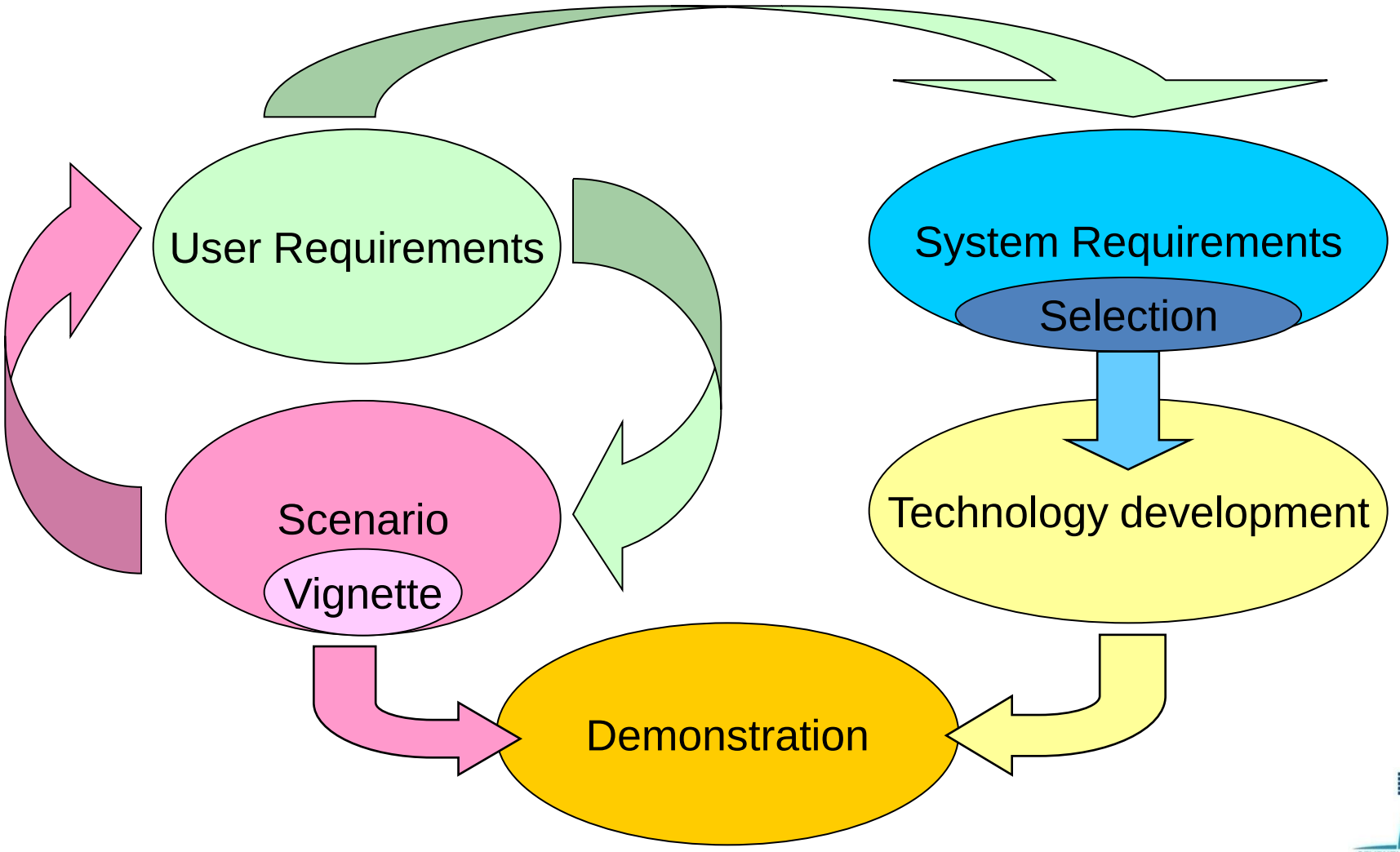

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What is an IER?

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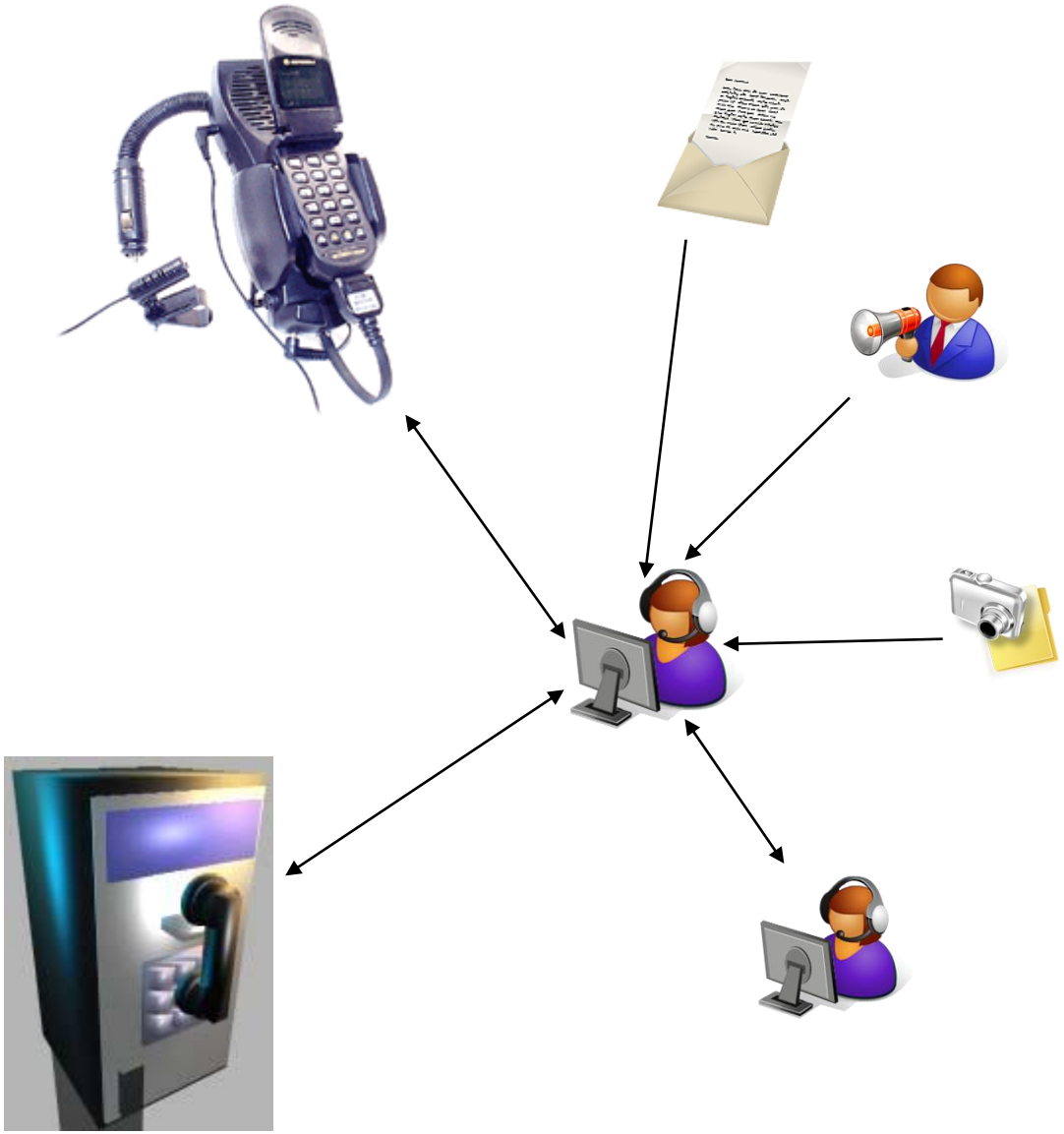

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Information Exchange Requirements

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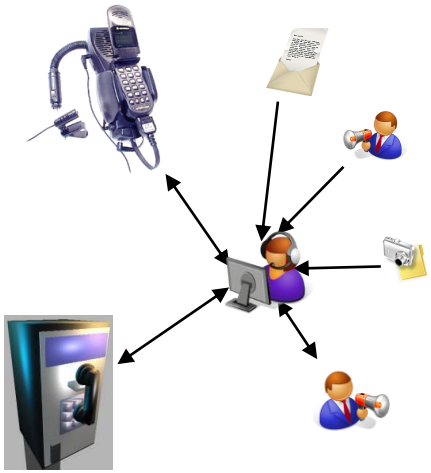
An IER is the

"Unconstrained User Requirement for Information Exchange"



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IER Capture Process

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- **User Requirements** – describe what we want to achieve
- A representative **Scenario** brings them to life
- The Scenario is broken down into **Activities**
- Activities are recorded as **IERs**
- Each activity has one or more IERs associated with it
- **IERs** fall into **Situational Awareness** or **Command and Control**

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IER Capture

- User team exercise – September 2009
- Captured over 700 IERs linked to Activities
- IER key information criteria:
  - **Source** & **Destination**
  - **Information type** (e.g. voice, message, image)
  - **Size** (linked to information type)
  - **Timeliness** (“worst case time to delivery”)
- Additional information required:
  - **Criticality**
  - **Confidentiality**
  - Other analysis attributes (e.g. business function)

Outline Process

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- **Develop** Information Exchange Requirements (IERs) from the User Requirements
- **Analyse** IERs in the context of a scenario
- **Model** existing communications architecture
- **Identify** which IERs would be supported by the current architecture
- **Unsupported IERs** indicate Capability / Interoperability shortfall

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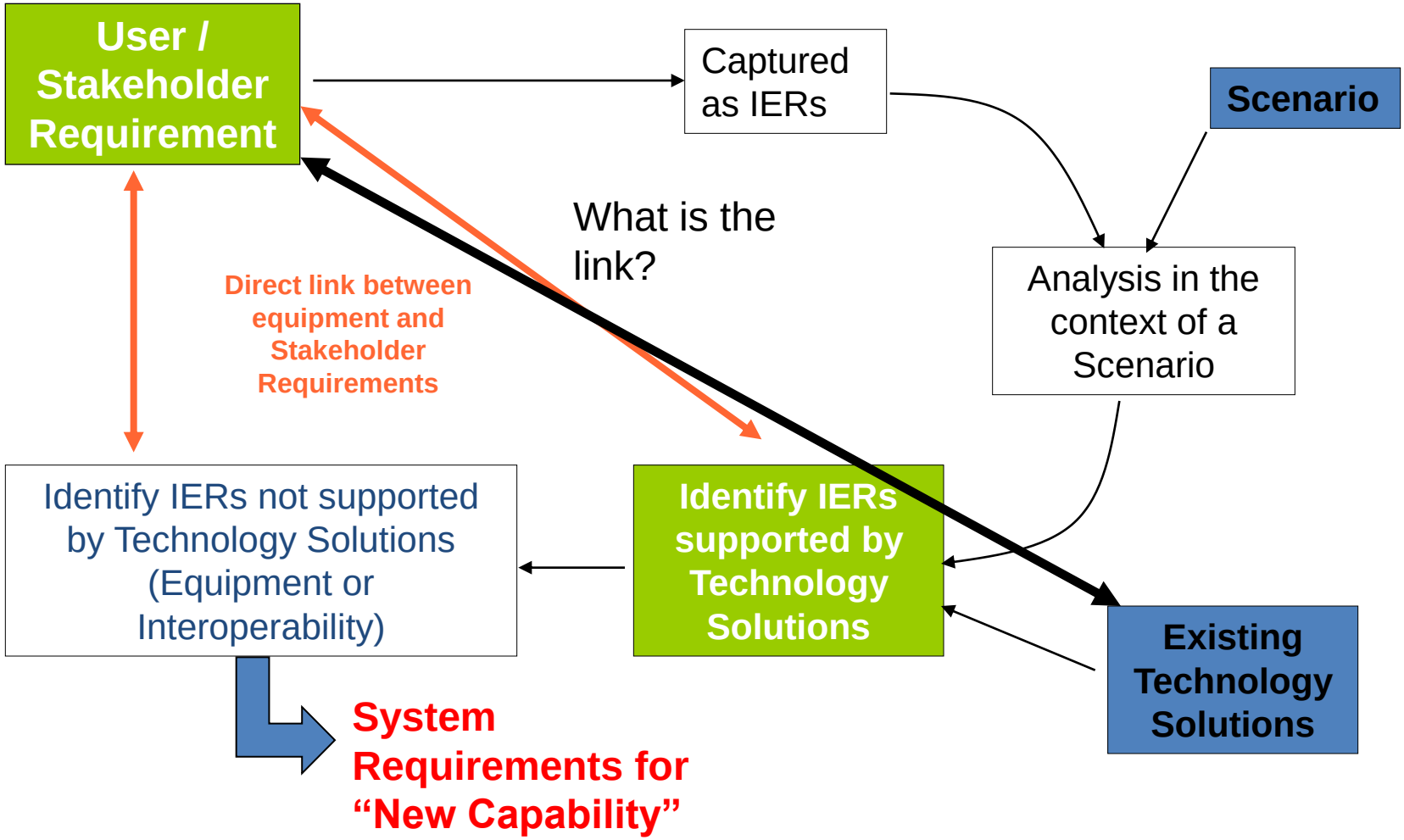
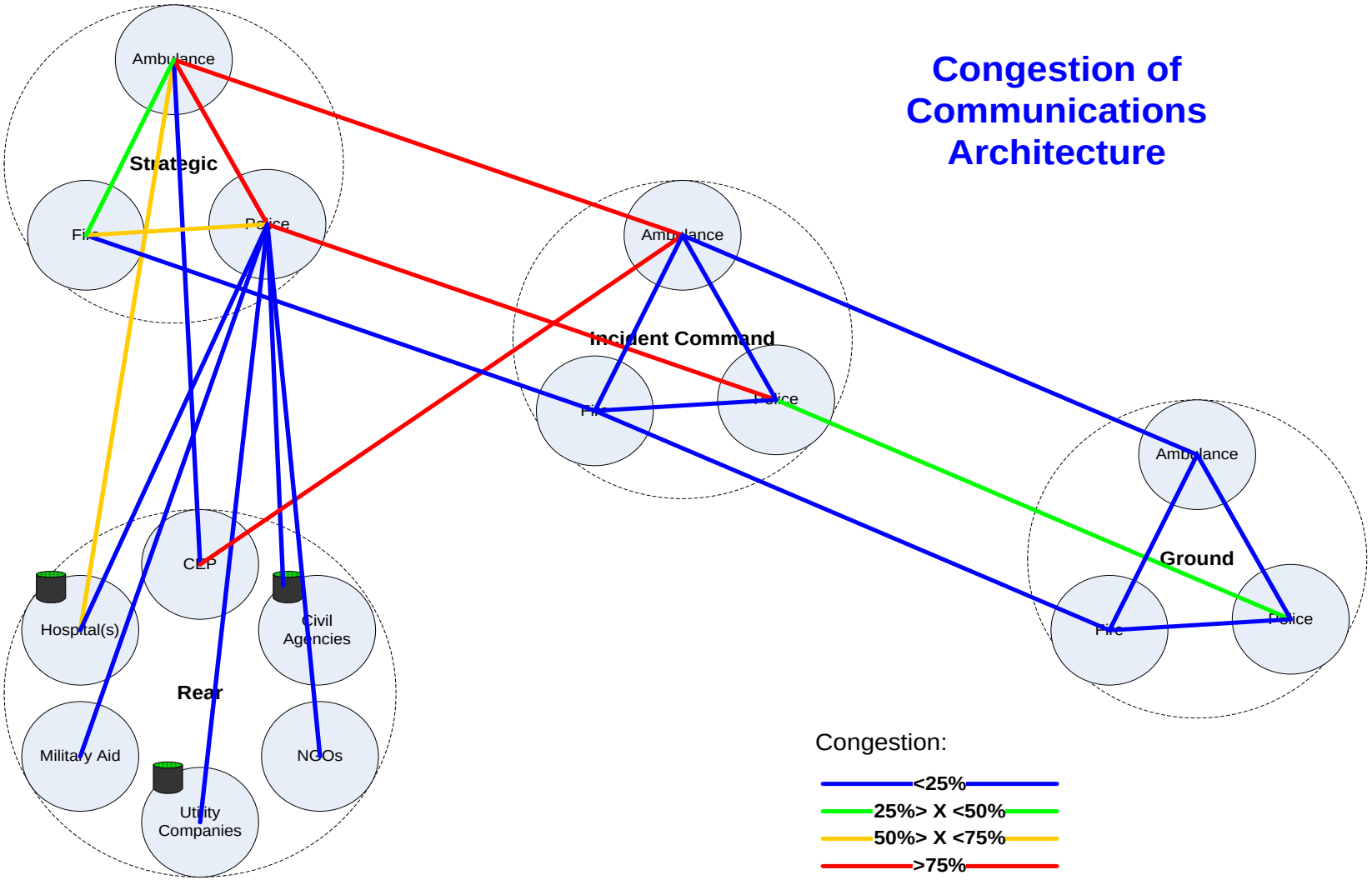
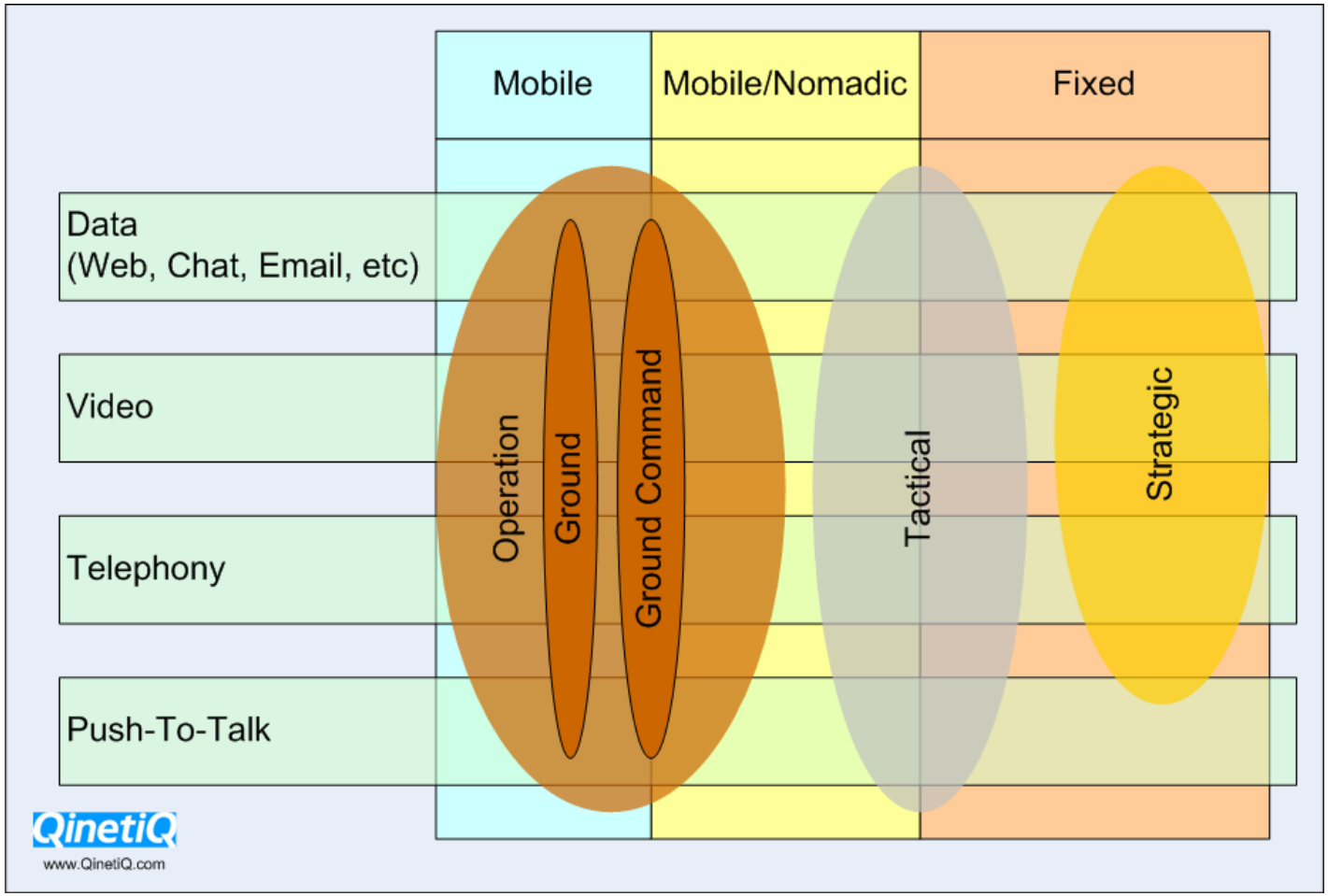
Capability Gap Analysis



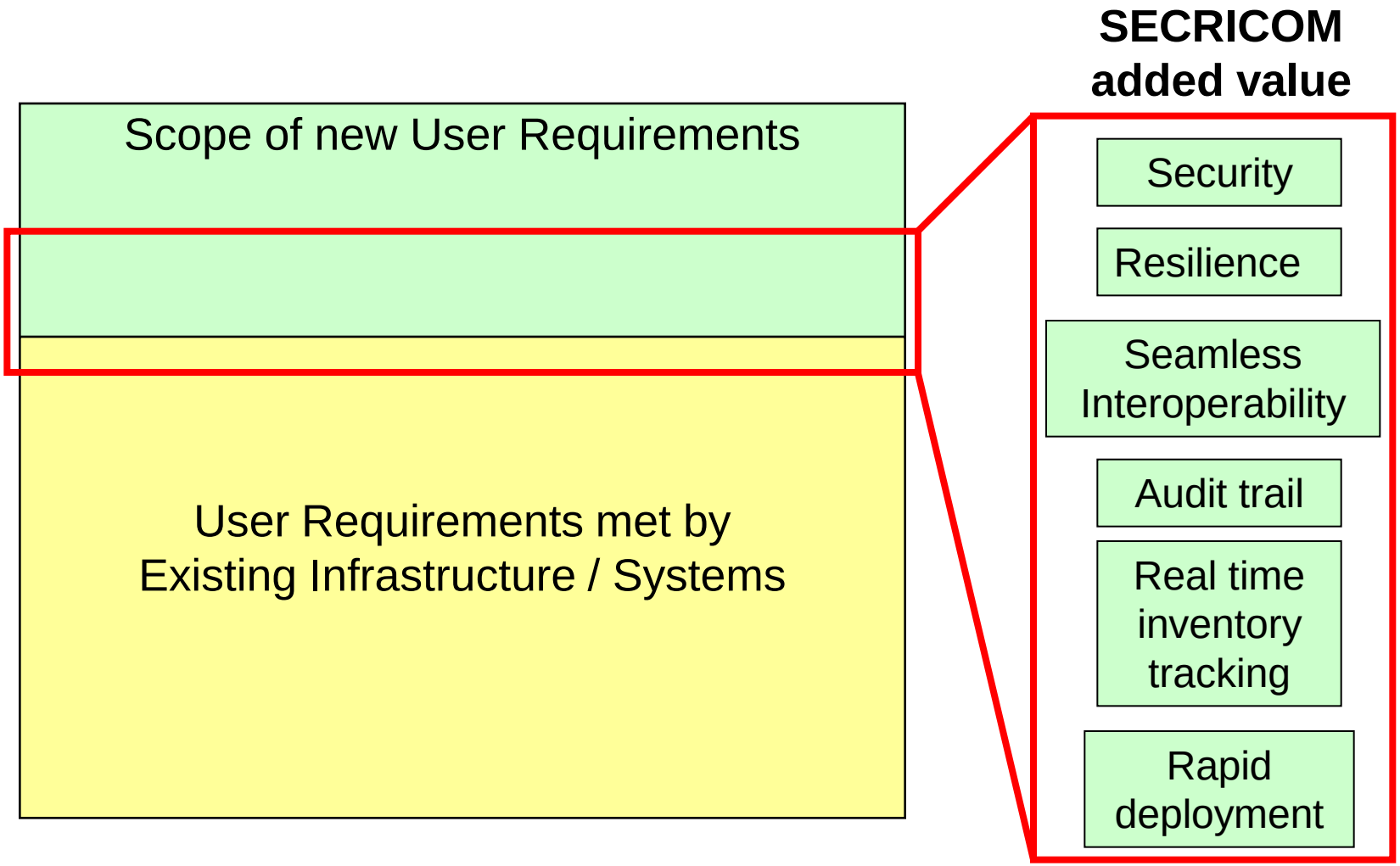
Capability Gap Analysis



Capability Gap Analysis



Capability Gaps – added value



Schematic of communications requirements

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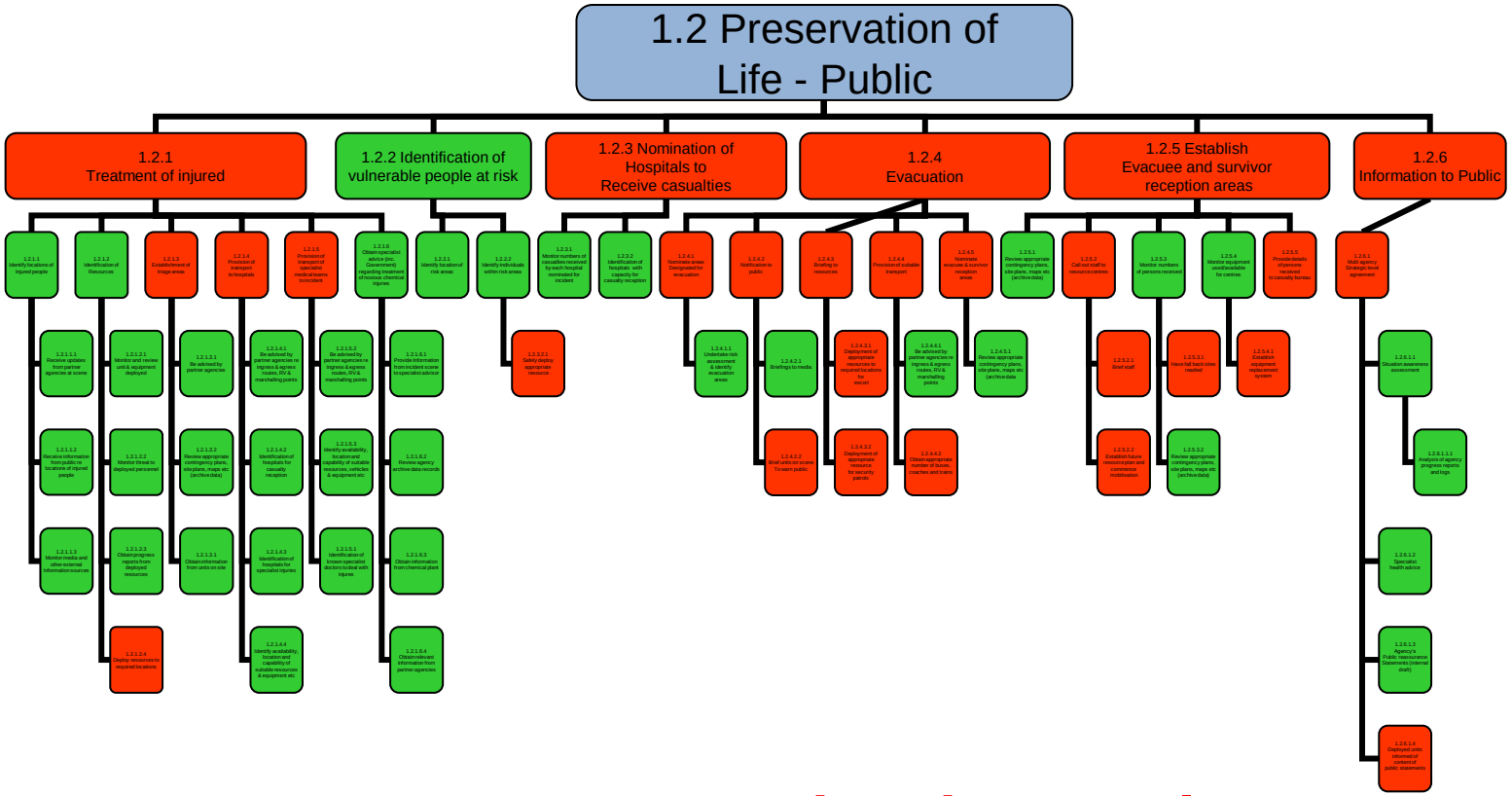

Command and Control

Situational Awareness

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Security Requirements Users Workshop

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- A workshop was conducted with the User Group to agree the following:
  - Communications Assets required to manage the crisis situation
  - The value of the Assets in terms of:
    - **Confidentiality**
    - **Integrity**
    - **Availability**

and thus…..

  - The indicative level of risk

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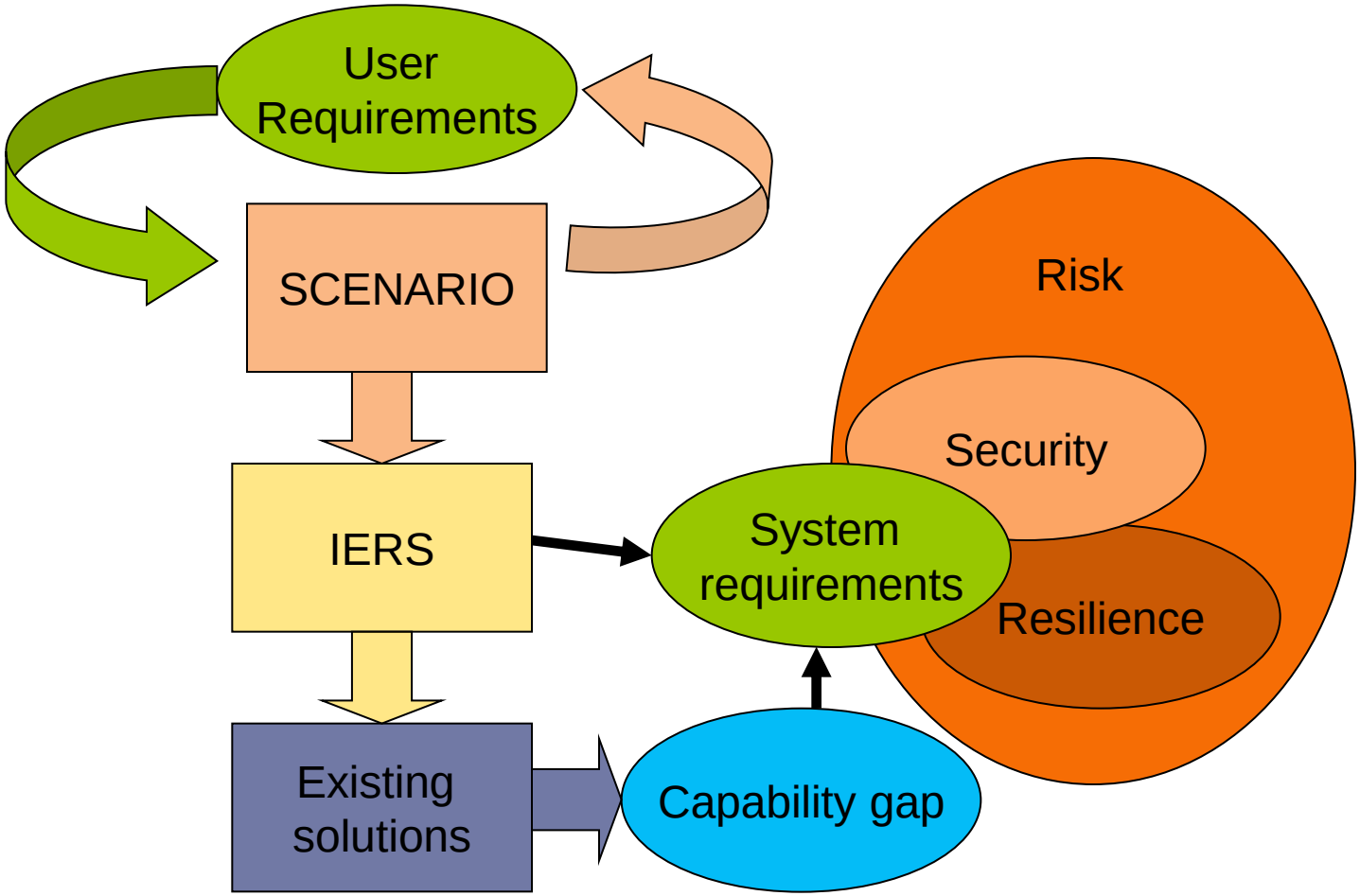
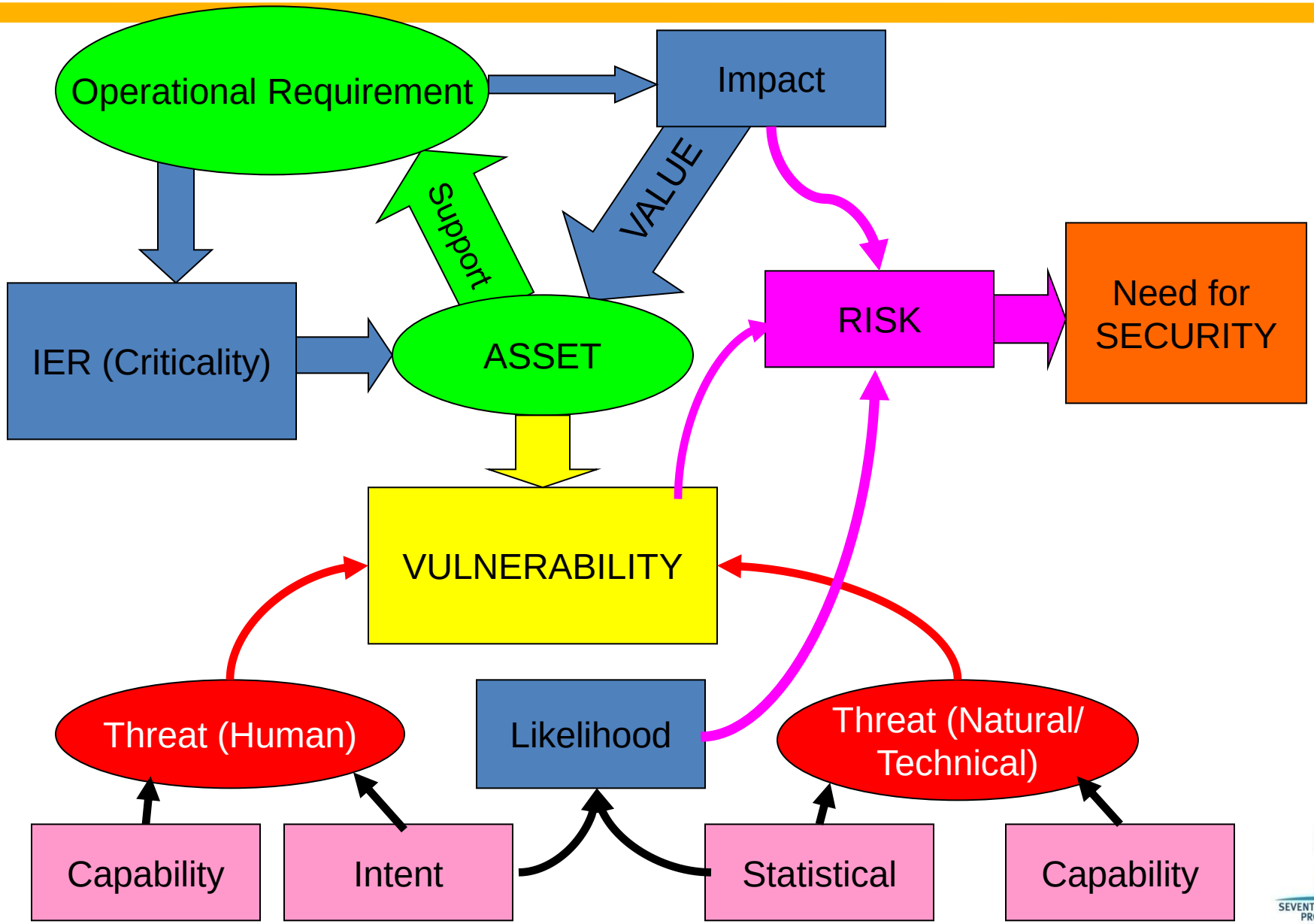
Security Requirements



Risk Interrelationships



Security Requirements – Key Points

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- Voice communications at all 3 levels of command, and between agencies, are seen as critical. Requires the **highest level of security** in terms of Confidentiality, Integrity and Availability
- Messages and file transfer are seen as the **next important**.
- Web services are the **least valued**
- Integrity, across all 3 command levels, is seen a **key requirement** (voice in particular) for all communications assets.
- In comparison to Integrity and Availability, Confidentiality is considered a **lesser requirement**
- Availability
  - Voice viewed as **essential**.
  - Messaging and file transfer more important than video and web

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IER Exercise - Key Findings

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- Overall voice is predominant (~50%), messaging next (~25%)
- Voice more concentrated at operational level - decreases higher up the command chain
- Data more concentrated at Strategic level - decreases lower down the command chain
  - Specific increased need was identified for image and video capabilities at operational level
- **Intra**-Agency communications are key at all levels of command
- **Inter**-Agency communications account for nearly a quarter of all IERs
- Situational Awareness provides the greatest proportion of IERs (~59%)
  - Ratio of Command & Control to Situational Awareness distorted due to voice & data versions of the same IER (driven by need for audit trail)
- Voice remains most significant IER data type for both Command & Control and Situational Awareness
  - Situational Awareness demands a greater use of non-voice data types

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BAPCO April 2010, UK

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NATO CP Exercise 2010, Slovakia

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- SECRICOM capabilities function effectively in a multi-agency/multi-national live Civil Protection Exercise (CBRN)
- SECRICOM solution operates in an integrated and cohesive manner
  - Legacy radios: Land-Mobile-Radios and CB Radios
  - Alongside previously tested devices: PCs, Laptops, Mobile Phones, PDAs

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BAPCO 2011 exhibition, UK

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- **Hands-on presentations of capabilities to exhibition visitors:**
  - **Secure Push-To-Talk** introduced by Ardaco - group communication on different platforms covering CB radio, mobile phones, touchscreen desktop and ruggedized devices. Dynamic group management, transmission of hand drawings and pictures, instant messaging and wide interoperability allow better coordination of emergency response.
  - **Multi-Bearer-Router** managed by Qinetiq - is an intelligent adaptive routing device enabling seamless inter-networking in a multi-bearer, multi-node, mobile environment designed to optimise network performance wherever users operate in environments where connectivity is poor.
  - **Network monitoring centre** operated by Nextel - with improved detection and network forensic solutions. As presented, it allows faster recovery for crisis communications.

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ASTER 2011 workshop, Poland

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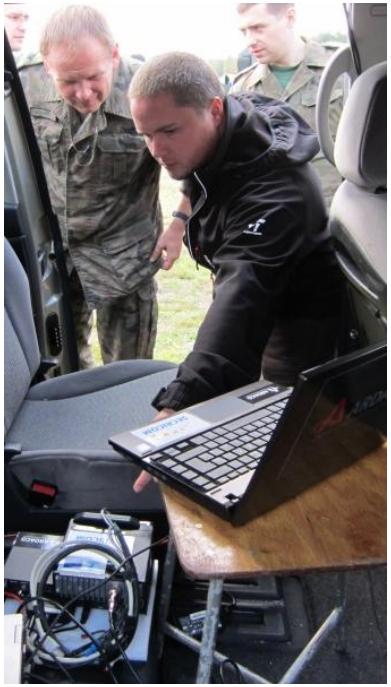

- **Fast-deployable Nomadic Node presented in field conditions**
  - Inter-connectivity on CB radio, WiFi, satellite
  - Communication applications Secure PTT on different platforms (Symbian, Android, Win Mobile, Windows)

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Final Demonstration 2012, Portsmouth, UK

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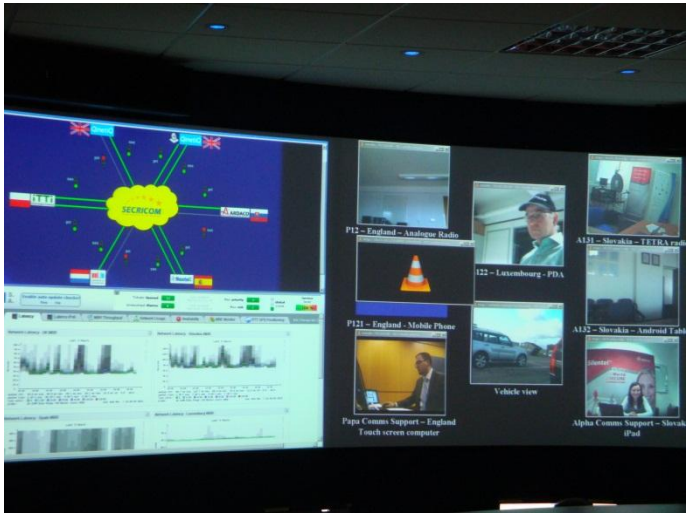

- Live visualisation for Review Officer and Stakeholders
- Actors using technologies in six countries

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www.secricom.eu