

**PSC Europe Forum Conference 28 & 29 November 2012**

**Rome, Italy**

**Session: Indoor localisation and communication during emergencies &  
Critical Information Infrastructure Protection**

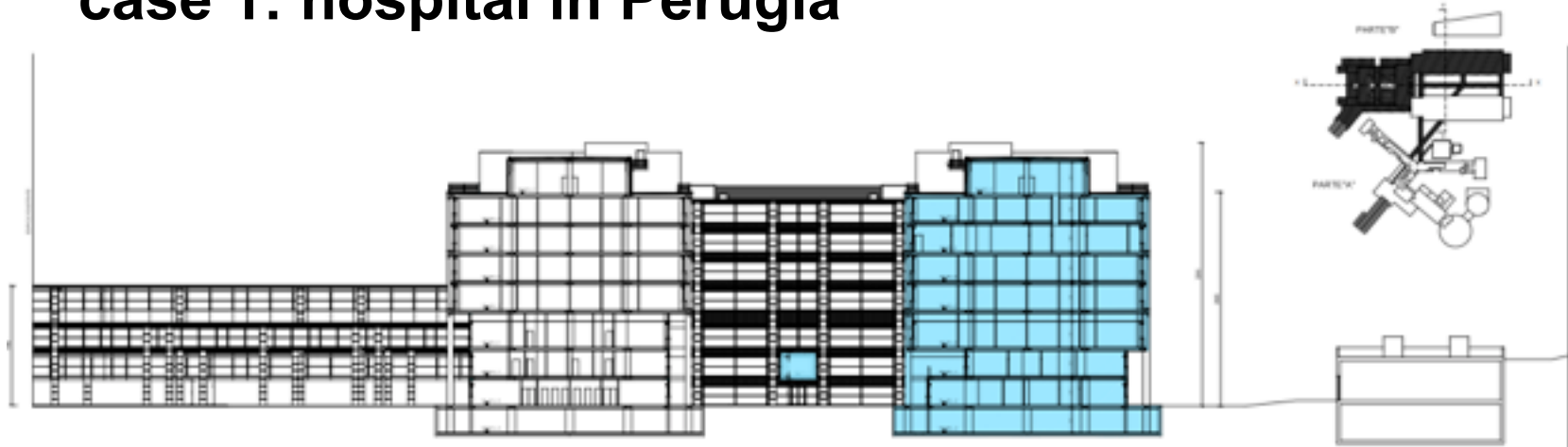
# **Indoor location: case studies and operational requirements**

**Stefano Marsella, Chief of the Provincial Fire Corps HQ of Perugia**

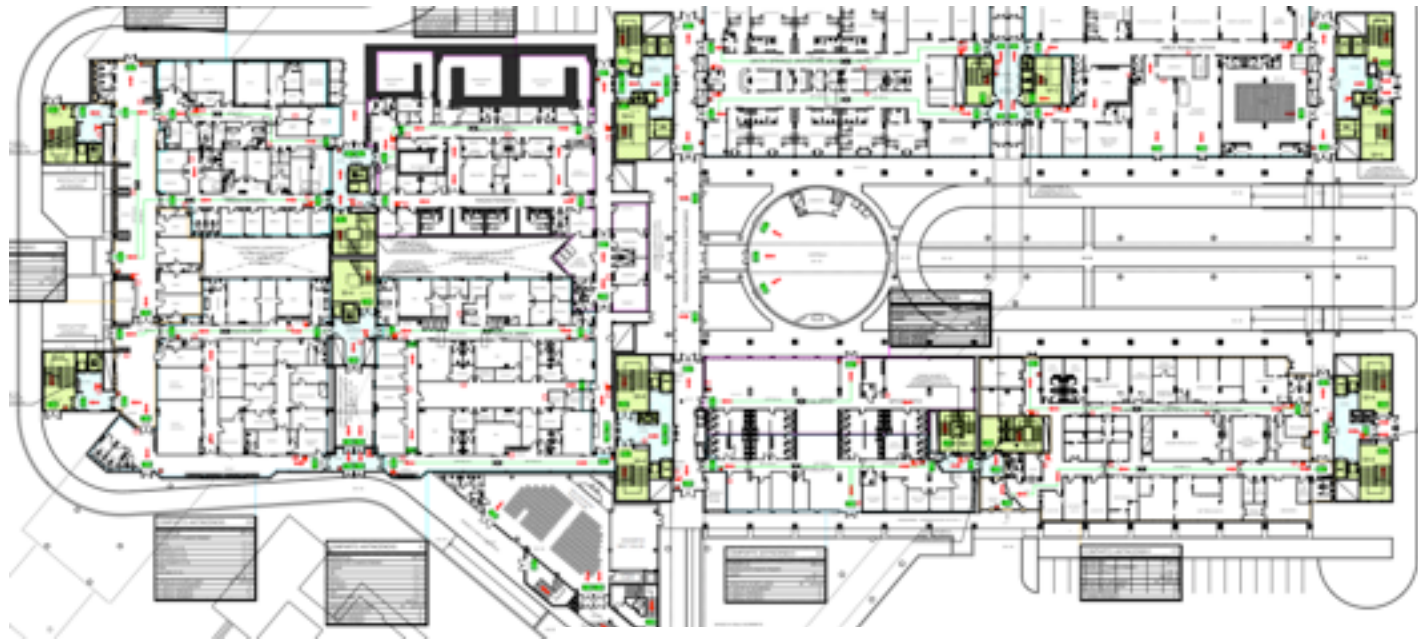


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# case 1: hospital in Perugia



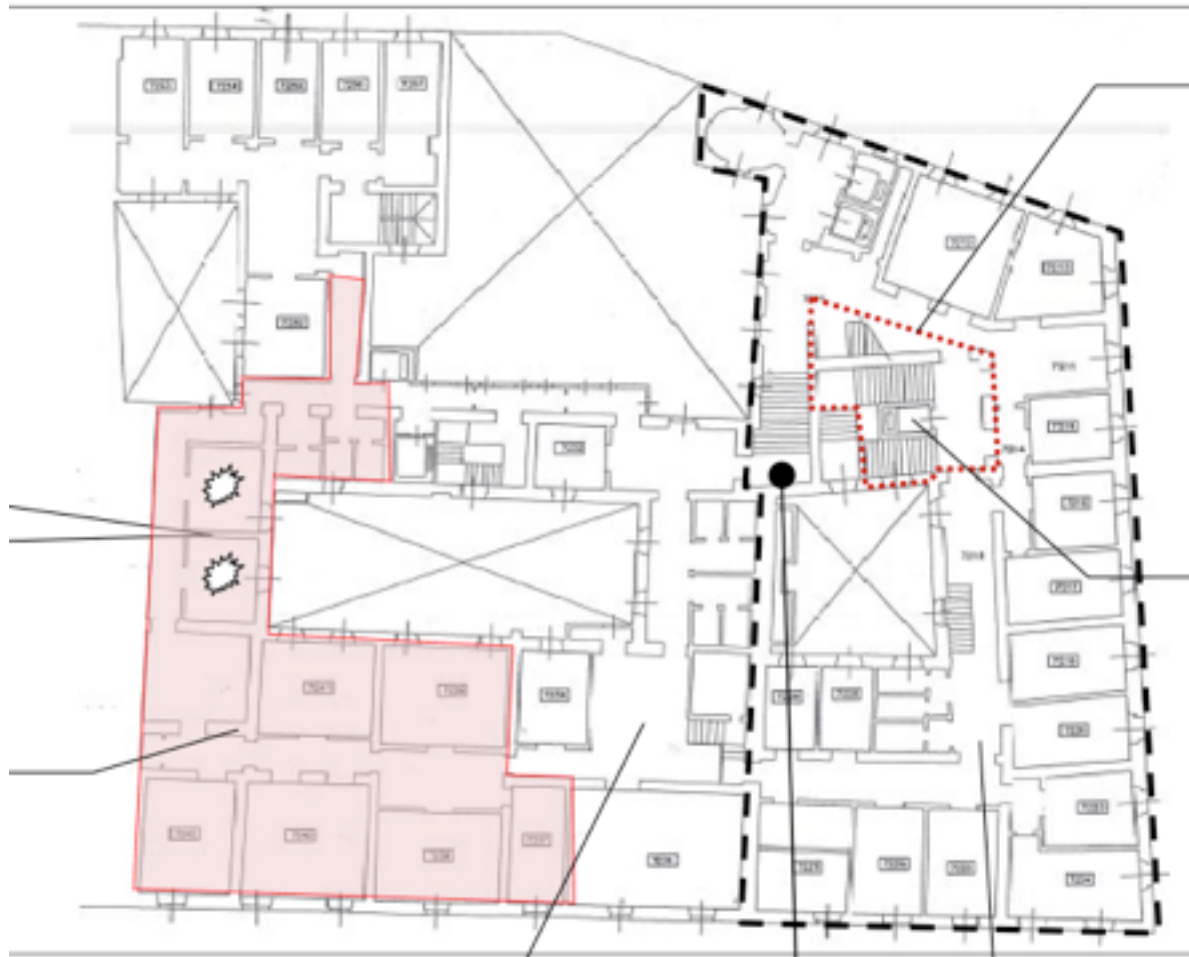
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## case 2: fire in historical building in Rome



- office building
- night fire
- 2 firefighters seriously injured



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# case 3: London fires & bombings



## King's Cross fire London, 1987

Thirty-one people died and 100 people were taken to hospital, 19 with serious injuries.



## King's Cross bombing London, 2005

July, 7 8:56- An explosion occurred in a Piccadilly Line Subway in the King's Cross, with at least 21 deaths. Twelve fire/rescue units with 60 firefighters attended the incident.

## Chase Farm Hospital, 2008

from: NHS Review of five London hospital fires and their management



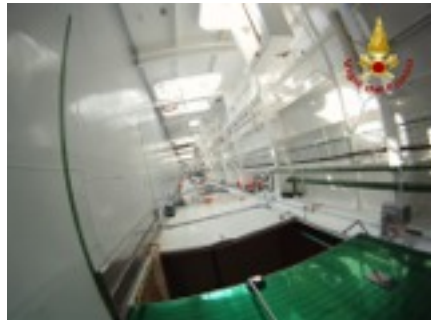
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# case 4: shipwreck rescue operations

## Costa Concordia rescue operations, 2012

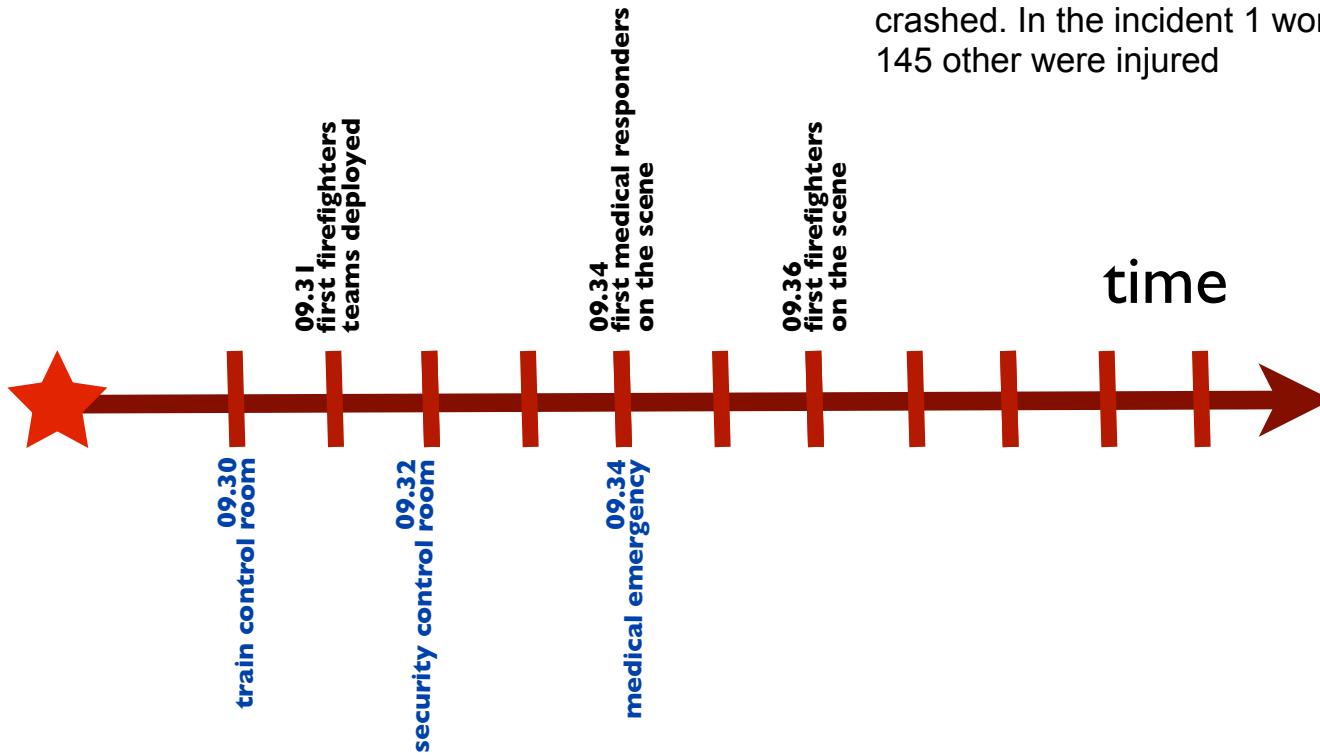
The cruise ship Costa Concordia partially sank on the night of 13 January 2012 after hitting a reef off the Italian coast, requiring the evacuation of the 4,252 people on board. Thirty people are known to have died, two others were still missing as of October 2012, and presumed dead; and 64 others were injured. Two passengers and a crewmember trapped inside were rescued in the days after the incident



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# case 5: underground train crash

On Oct. 17th, 2006, in a metro station two train crashed. In the incident 1 woman was killed and 145 other were injured



... no power supply, people heard a bang, smoke has filled both levels,...

...probably a crash but not confirmed, many bleeding people...



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# lessons learnt

- without basic information about the environment, every rescue operations will suffer delays
- without updated information about environmental risks rescuers are at risks
- communication and localization in every environment is a key element to ensure safe and efficient operations
- information given before operations are pivotal to speed up rescue
- every rescue operation poses different problems: flexibility of communication networks must be considered a key point



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# Fire Fighters operations & indoor environments problems:

general requirements	specific indoor environments problems
scenario awareness	need of relying mainly on information provided by the emergency call
external communication	need of relying on communication network, when available
internal communication	exchange information only through direct contact
identification of operation site(s)	directions of people, when present in the environment, or emergency call info
location among operators	direct contact among operators
localization of operators from external environment	need of relying on communication network, when available
location of specific risk elements	directions of people, when present in the environment, or emergency provided by emergency call



# Fire Fighters operations & indoor environments: requirements

- need of basic information about the environment (safety exits etc)
- need of updated information about environmental risks
- need of communication and localization in every environment
- situation awareness needed before rescue operations
- flexibility of communication networks

**thank you**



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