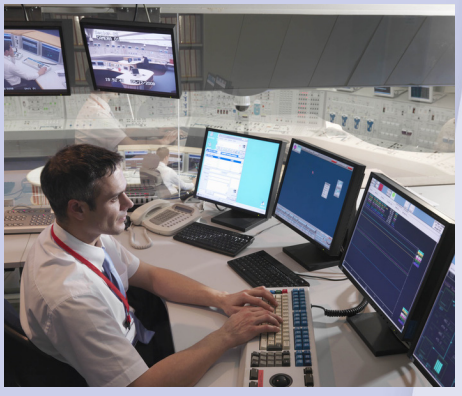
Critical Infrastructure Preparedness and Resilience Research Network

CIPR Net

Master Class on Modelling, Simulation and Analysis of Critical Infrastructures (CI)



Fraunhofer Institute for Intelligent Analysis and Information Systems

Sankt Augustin, Germany, November 23–24, 2016

www.ciprnet.eu

The Master Class is organised by:
Fraunhofer Institute for Intelligent Analysis and Information Systems (Fraunhofer IAIS)

University Campus Bio-Medico of Rome

Fraunhofer IAIS

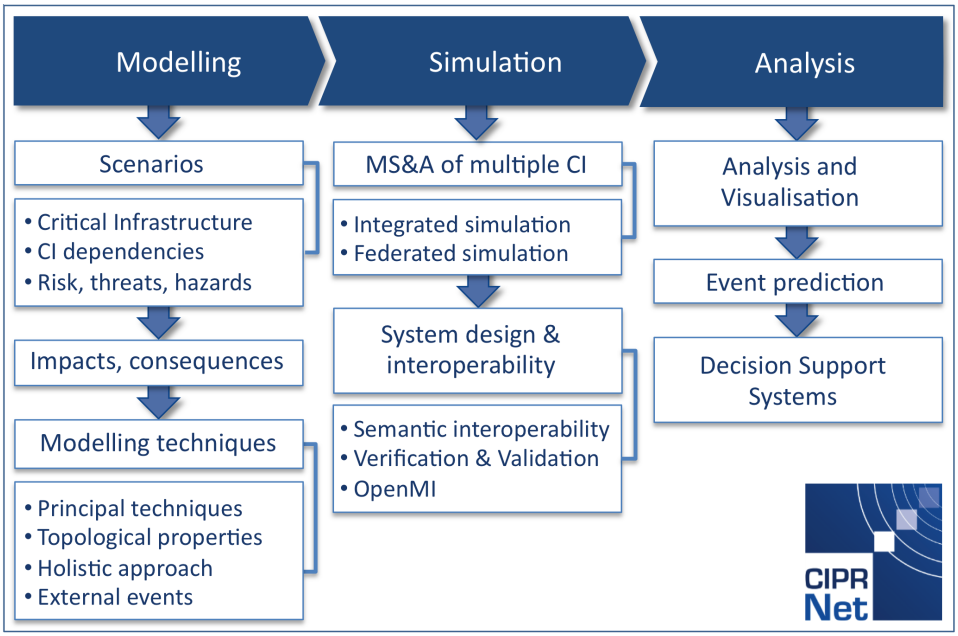
UNIVERSITÀ CAMPUS BIO-MEDICO DI ROMA

Programme

23 November

9:30 – 10:00	**Registration and welcome coffee**	
10:00 – 10:10	R. Setola (UCBM) E. Rome (Fraunhofer)	**Welcome**
10:10 – 10:40	R. Setola (UCBM)	**Introduction to CIPRNet**
10:40 – 11:20	M. Theocharidou (JRC)	**From CI Protection to CI Resilience**
11:20 – 11:40	**Coffee break**	
11:40 – 12:30	V. Rosato (ENEA)	**CIPcast – a decision support system for CI related crisis management**
12:30 – 13:10	E. Luiijf (TNO)	**Simulation of CI: relevant applications**
13:10 – 14:10	**Lunch**	
14:10 – 15:00	M. Eid (CEA)	**Principal modelling techniques: applications and limitations**
15:00 – 15:40	R. Setola (UCBM)	**Modelling and investigating dependencies of CI**
15:40 – 16:00	**Coffee break**	
16:00 – 16:40	E. van Veldhoven (TNO)	**Introduction to Federated Simulation**
16:40 – 17:20	R. Kozik (UTP)	**Cyber threats to CI**
17:20 – 18:00	E. van Veldhoven (TNO)	**Verification and validation techniques**

Conceptual map of topics in modelling, simulation and analysis (MS&A) of Critical Infrastructures (CI)



Programme

24 November

8:45 – 9:15	**Welcome coffee / Taking seats**	
9:15 – 10:15	E. Rome & J. Xie (Fraunhofer)	**CIPRTrainer – training the exploration of different courses of action** > »what if« analysis as a new capability for crisis management training > CIPRTrainer system overview > Modelling & event processing in CIPRTrainer > Simulation & rollback for »what if« analysis > Training concept
10:15 – 10:30	**Coffee break**	
10:30 – 11:15	S. Rilling (Fraunhofer)	**Federated simulation in CIPRTrainer** > Infrastructure simulators and models > Federated simulation, modelling dependencies; preserving causality
11:15 – 12:00	N. Voß (Fraunhofer)	**Consequence analysis as a basis for »what if« analysis** > Application areas > CIPRNet's hybrid CA approach assessing impacts & consequences of crises & disasters > Data elicitation and handling > CA assessment & presentation in CIPRTrainer
12:00 – 13:00	**Lunch break**	
13:00 – 13:40	S. Rilling (Fraunhofer)	**CIPRTrainer derailment and flooding scenarios with cross-border aspects**
13:40 – 14:15	B. Sojeva (Fraunhofer)	**CIPRTrainer demonstration and hands-on experience – introduction of Part 1:** > CIPRTrainer GUI, GIS functionality, User roles: Trainer, trainees > »what if« analysis for exploring different courses of action
14:15 – 14:30	**Coffee break**	
14:30 – 15:15	Participants	**Hands-on Part 1: Familiarising with CIPRTrainer**
15:15 – 15:45	E. Rome & B. Sojeva (Fraunhofer)	**CIPRTrainer demonstration and hands-on experience – introduction of Part 2: Crisis management actions in CIPRTrainer**
15:45 – 17:15	Participants	**Hands-on Part 2: Crisis Management exercise with CIPRTrainer incl. »what if« analysis** (2 groups, 2 cycles)
17:15 – 17:45	All	**Wrap-up, evaluation**

Venue

Fraunhofer Institute for Intelligent Analysis and Information Systems (Fraunhofer IAIS), Schloss Birlinghoven, Sankt Augustin, Germany

How to get to Fraunhofer IAIS

> Airports: Cologne (Köln/Bonn, CGN). Alternatives: Frankfurt, Düsseldorf
> Railway: Station Siegburg/Bonn or station Bonn Hbf
> From Siegburg/Bonn railway station we recommend taking a taxi
> From Bonn Hbf railway station, take bus line 608 direction Gielgen, at Gielgen change to bus line 636 direction Hangelar-Ost, exit Schloss Birlinghoven
> Car: Via motorways A3/A560 and A59. Entry for car navigation systems: Destination: Sankt Augustin, Street: Konrad-Adenauer-Strasse
> Detailed travel directions: https://www.iais.fraunhofer.de/en/footer/contact/directions.html

Registration

The **participation** to the CIPRNet Master Class is free but limited to a maximum of 40 participants for logistic reasons. **Details** about the event and an **online registration form** can be found at http://www.ciprnet.eu/endusertraining.html
Registration deadline is October 31, 2016
In case you need accommodation, please **book yourself** a hotel room. For your convenience, we have included a list of hotels on the registration page (same URL as above).

Contacts

For enquiries regarding the content of the course, please contact Maria Carla de Maggio m.demaggio@unicampus.it for any information.
For enquires about logistic aspects of the course, please contact Erich Rome erich.rome@iais.fraunhofer.de.

Venue

Presentations:
Great Hall of Birlinghoven Castle
Hands-on:
Pavillion C1a

The aim

The Master Class on "Modelling, Simulation and Analysis of Critical Infrastructures" is a series of training events organized within the European Project CIPRNet – Critical Infrastructure Preparedness and Resilience Research Network. The aim of the Master Classes is to perform training and demonstration activities to the Critical Infrastructures Protection and Civil Protection communities, in order to strengthen links between different institutions and to create common views.

This is the third and final of three yearly editions aimed at introducing a common view regarding basic and advanced tools of Modelling, Simulation and Analysis of Critical Infrastructures. Its third edition will be delivered following a "module" approach:

> **Module 1 (23rd November 2016):** notions and theories regarding Critical Infrastructure modelling, simulation and analysis will be described in details. This module is particularly indicated for researchers and any professional needing a general introduction to and overview of the topic;
> **Module 2 (24th November 2016, morning):** 'what if' analysis with consequence analysis as a new capability for exploring different courses of action in simulated crisis scenarios, description of the training tool CIPRTrainer developed by Fraunhofer within the CIPRNet project. This module is particularly indicated for any type of audience, including CI operators and Civil Protection;
> **Module 3 (24th November 2016, afternoon):** Hands-on exercises with CIPRTrainer in small crisis management teams. This module is particularly indicated for professionals in crisis management at tactical level in Civil Protection.

Top experts from various backgrounds will be presenting the lectures. This training event is mainly addressed to professionals in crisis management at tactical level in Civil Protection, CIP Researchers and experts from different research communities (European and non-European), and stakeholders from Critical Infrastructure operators.