

# Critical Infrastructure Research and Resilience Network



## New Capabilities

The CIPRNet's joint R&D activities towards implementing new capabilities include:

- Creating added-value, decision-support capabilities with consequence analysis for national and multi-nation emergency management and CI owners based upon integrating technologies available at CIPRNet partners,
- Supporting the secure design of Next Generation Infrastructures (such as Smart Grids),
- Creating a new 'what if' modelling, simulation and analysis capability for training emergency managers by exploring different courses of action in crises.

## VCCC and EISAC

Another tangible result of CIPRNet is the Virtual Centre of Competence and Expertise in CIP (VCCC). It provides support from the CIP research communities to stakeholders. Its services are accessible through the CIPRNet web site. A newly founded association will foster the evolution of the VCCC to EISAC for sustaining support beyond the duration of CIPRNet.

## Capacity Building

CIPRNet supports capacity building within the multi-disciplinary community of CIP experts by training activities like CIPRNet Master Classes for end-users, CIPRNet courses for post-graduate students and CIPRNet lectures for a wider community. Also, CIPRNet fosters open-minded young talents that are required for building and sustaining the expert capacities. One means is the CIPRNet Young CRITIS Award (CYCA) for the best young talents' research work in CIP.

[ciprnet.eu](http://ciprnet.eu)

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Agenzia Nazionale per le Nuove Tecnologie, L'Energia e lo Sviluppo Economico Sostenibile (ENEA)

Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek (TNO)

Union Internationale des Chemins de fer (UIC)

Commissariat à l'énergie atomique et aux énergies alternatives (CEA)

The European Union represented by the European Commission represented by the Joint Research Centre (JRC)

Stichting Deltares (Deltares)

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The University of British Columbia (UBC)

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Canada

Switzerland

# Critical Infrastructure Research and Resilience Network



[ciprnet.eu](http://ciprnet.eu)

## Project facts

Network of Excellence  
Co-funded by EU FP7  
Started March 1, 2013  
Duration 48 months  
Partners 12  
Grant no 312450

## CIPRNet Summary

The Critical Infrastructure Preparedness and Resilience Research Network or CIPRNet establishes a Network of Excellence in Critical Infrastructure Protection (CIP). CIPRNet performs research and development that addresses a wide range of stakeholders including (multi)national emergency management, critical infrastructure operators, policy makers, and the society. By integrating resources of the CIPRNet partners acquired in more than 60 EU co-funded research projects, CIPRNet will create new advanced capabilities for its stakeholders. A key technology for the new capabilities will be modelling, simulation and analysis for CIP. CIPRNet builds a long-lasting virtual centre of shared and integrated knowledge and expertise in CIP. This virtual centre shall provide durable support from research to end users. It will form the foundation for the European Infrastructures Simulation & Analysis Centre (EISAC) by 2020.

## CIPRNet mission

The CIPRNetwork will provide concrete and long-lasting support from the CIP research communities to the initial audience, enhancing their preparedness for CI-related emergencies, and provide knowledge and technology to other stakeholders for improving the understanding and mitigation of the consequences of CI disruptions, leading to an enhanced resilience of CI.

## CIPRNet Services

- [cipedia.eu](http://cipedia.eu)
  - [online glossary of CIP](#)
  - [list of CIP conferences](#)Registration of experts asked for!
- [European CIIP Newsletter](#)
- [CIPRNet training events](#)
- [CIPRNet lectures](#)
- [Bibliography of CIP literature](#)
- [Database of CIP research projects](#)
- [CIPRNet publications and deliverables](#)
- [More to come!](#)  
Visit [ciprnet.eu](http://ciprnet.eu)



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 312450. The European Commission's support is gratefully acknowledged.

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# Advanced Decision Support

## CIPRNet Decision Support System (DSS) services

The functions of the CIPRNet Decision Support System include consequence analysis, threat forecasting, threat visualisation, and data accessing and gathering. These functions are bundled into the following services:

- S1 (Operational DSS)
- S2 (DSS with Event Simulator)
- S3 (DSS with synthetic Harms Simulator)
- S4 (What-if analysis tool)

S1 is the **operational** DSS that receives data in real time from *true* external inputs (meteo forecast, nowcasting data, earthquake data (shake maps), etc.) and starts operationally the whole chain of Risk Analysis.

S2 is an **on-demand tool** containing the same workflow of S1 but using as inputs *simulated* meteo or geophysical events, like earthquakes, heavy precipitation and lightning, heat/cold waves and strong winds. This enables stress-testing of critical areas with respect to potentially occurring natural events.

S3 is an **on-demand tool** supporting the creation of *synthetic* harm scenarios (virtual physical damages inserted by the user). For stress-testing during the preparedness phase of crisis management, S3 can produce artificial threat scenarios.

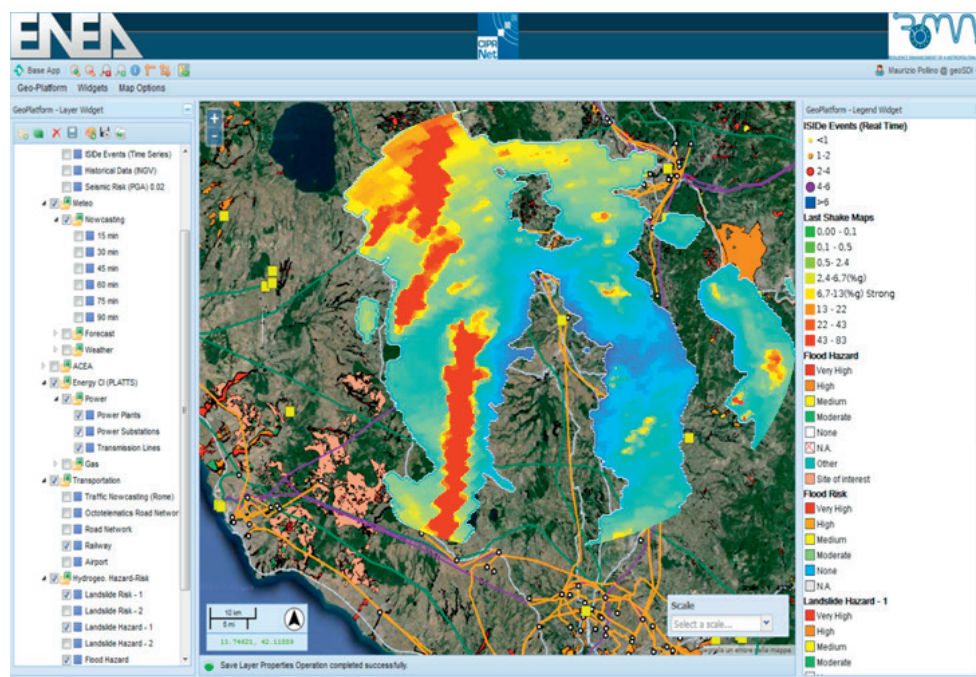
S4 triggers the start of the last part of the DSS workflow. End-users can use S4 **on demand** for designing, comparing, and validating mitigation and healing strategies through (what-if) analysis of potential consequences they produce.

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# CIPRNet's VCCC services

## CIPedia® – [clopedia.eu](http://clopedia.eu)

CIPedia® is an online glossary of CIP terms and definition and aims at establishing a common reference point for CIP concepts and definitions. CIP terminology varies significantly due to contextual or sectoral differences, which, combined with the lack of standardisation, create an unclear landscape of concepts and terms. CIPedia® tries to serve as a point of disambiguation where various meanings and definitions are listed, guiding the reader to seek additional information to the relevant sources. CIP and domain experts can register to make contributions to CIPedia®. Also, CIP conference information can be entered.

Contact: [marianthi.theocharidou\(at\)jrc.ec.europa.eu](mailto:marianthi.theocharidou(at)jrc.ec.europa.eu)

## European CIIP Newsletter (ECN) – [ciprnet.eu/ecn.html](http://ciprnet.eu/ecn.html)

Established in 2006, the ECN is a focused dissemination organ for fostering the cooperation between the CI(I)P research communities and CI and CII stakeholders. The ECN addresses the CIP and CIIP research communities, policy makers, CI operators, crisis managers and civil protection agencies. The scope of the ECN includes feature articles of project results, expert articles on hot C(I)IP and CIP issues, best practices in C(I)IP and CIP and more.

Contact: [bmhaemmerli\(at\)acris.ch](mailto:bmhaemmerli(at)acris.ch)

## CIP related research information – [ciprnet.eu](http://ciprnet.eu)

Information on CIP related research and its results is currently scattered across various sources, making it hard for stakeholders to get a full picture of these efforts. CIPRNet is building a comprehensive base of CIP research related information. This includes a database of CIP reeseach projects, a bibliography of CIP related literature, and numerous links to other relevant sources of information. Also, CIPRNet's own results, publications and deliverables, are being offered.

Contact: [erich.rome\(at\)iais.fraunhofer.de](mailto:erich.rome(at)iais.fraunhofer.de)

## CIPRNet training activities – [ciprnet.eu/capacity\\_building.html](http://ciprnet.eu/capacity_building.html)

CIPRNet performs a wide range of training activities, like Master Classes for end-users, courses for post-graduate students and lectures for a wider community. Check out the announcements at the CIPRNet website! Online participation is possible (registration required).

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