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D4.9 Report on final status of the VCCC

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List of Abbreviations

Abbreviation	Explanation
CI	Critical Infrastructure
CIIP	Critical Information Infrastructure Protection
CIP	Critical Infrastructure Protection
CIPRNet	Critical Infrastructure Preparedness and Resilience Research Network
CIR	Critical Infrastructure Resilience
DBMS	Database Management System
DIESIS	Design of an Interoperable European federated Simulation network for critical InfraStructures
DSS	Decision Support System
Dx.y	Deliverable number y for Work Package x
ECN	European CIIP Newsletter
EISAC	European Infrastructures Simulation & Analysis Centre
GIS	Geographic Information System
MOOC	Massive Open Online Courses
MS&A	Modelling, Simulation and Analysis
RTD	Research and Technological Development
TRL	Technology Readiness Level
VCCC	Virtual Centre of Competence and expertise in CIP
WPx	Work Package x

1 Introduction – Rationale of this document

1.1 Background

The fourth major objective of CIPRNet was to lay the foundation for a long-lasting centre of competence and expertise in Critical Infrastructure Protection (CIP), the European Infrastructures Simulation & Analysis Centre (EISAC). The CIPRNet consortium knew that implementing EISAC is a process that takes longer than the four years of the CIPRNet project. Therefore, CIPRNet planned starting this process by creating a **virtual** centre of competence and expertise in CIP (VCCC) already during the project term. The actions for achieving this are described in CIPRNet's agenda [DoW]. By implementing the CIPRNet agenda and by combining and integrating the excellence in CIP knowledge, expertise, experiences and technology of the partners, CIPRNet created the tangible VCCC that serves as the foundation of the long-lasting European Infrastructures Simulation and Analysis Centre.

1.2 Objective

This **D4.9** report on the final status of the VCCC has the objective to describe the state of the VCCC two months before the end of the project. It should be read before its companion deliverable **D4.7** [CD4.7], which describes the plan for implementing EISAC and builds on this deliverable.

1.3 Scope

This deliverable D4.9 describes all achievements that CIPRNet has made regarding the implementation of the VCCC. The presentation of the achievements uses the concept of 'services' that CIPRNet's VCCC has provided to its target audiences: to researchers in Critical Infrastructure Protection (CIP) and Resilience (CIR), stakeholders, CI operators, civil protection institutions, and more. Most of the described services refer to genuine CIPRNet work, like the CIPRNet courses and the Master Classes, which clearly cannot be offered after the end of CIPRNet without additional funding. However, CIPRNet aims at sustaining some of the services beyond the end of CIPRNet (like CIPedia©). For each of the service groups, this deliverable reflects on the achievements during CIPRNet, the final state of the service group, the usage and added value for stakeholders, and the prospect of the service group.

1.4 VCCC Status – Services

The VCCC has been brought to life by implementing CIPRNet's agenda of research and technological development (RTD), training, and dissemination activities. The RTD activities were aimed at realising new capabilities for CIPRNet's initial audiences. Training activities served capacity building in the multi-disciplinary community by training young researchers, professionals in civil security / CIP / CIR, and other stakeholders. Dissemination activities had a broad scope, including dissemination of research results to the scientific communities, targeted stakeholder contacts for disseminating CIPRNet's plans, but also for seeking advice for realising new capabilities and other VCCC services. Focused collaboration workshops and information for the general public complete CIPRNet's spectrum of dissemination activities.

The consortium has chosen a **service framework** for describing the offerings of the VCCC to its initial audiences, using a broad understanding of the notion of a 'service'. For instance, training and dissemination activities are services that CIPRNet has offered to its audiences. Other services are web based repositories (like a database of CIP related research projects) or

facilities (like CIPedia© or demonstration services of CIPRNet’s new capabilities). Using a service framework facilitates describing the planned offerings of EISAC to its audiences – or, in other words, it facilitates formulating a business plan. This will be part of the companion deliverable [CD4.7], which uses the same service framework.

1.5 Structure of the document as guidance to the reader

The next section, Section 2 briefly, explains the nature of the VCCC at the end of the CIPR-Net project, how we arrived there, and the next stepping stone on the planned way ahead towards EISAC, the association (by German law) “2E!SAC, association for improving vital infrastructure resilience in Europe”. For the latter aspect, there is the comprehensive deliverable [CD4.7] that provides the details. Section 3.1 provides an overview of the main services of the VCCC. Sections 4 through 9 present the VCCC services one by one, following the scheme of ‘current status’, ‘stakeholders’, ‘main achievements’, and ‘next planned steps’. Section 10 describes generic aspects of the services, including security, compliance, and ethical aspects. Section 11 summarises the path from the VCCC to the final goal, the realisation of EISAC. The main part of the report concludes with a summary and overall assessment in Section 12. Standard parts provide bibliographical references and annexes.

This deliverable describes:

1. Repositories and database of CIP-related technologies and research results (Section 7).
2. Advertisement of the excellence and the available CIP expertise within CIPRNet on the VCCC web portal (Sections 3.2 and 8).
3. Service offerings to the wider Critical Infrastructure Protection (CIP) and Critical Infrastructure Resilience (CIR) communities and stakeholders through the VCCC web portal. Section 3.3 provides an overview of the CIPRNet VCCC services and references to the various sections of this document where the VCCC services are described in detail.
4. The realistic prospect of sustained operations of functions of the VCCC, and the next steps planned (Section 11, cf. Figure 15). This includes plans for separating the CIPRNet project documentation on the web portal from the VCCC services. Please note that the long-term sustainability as part of the European Infrastructure Simulation and Analysis Centre concept is described in a companion deliverable [CD4.7]. Therefore, we would provide references to [CD4.7] wherever appropriate in this current deliverable.

2 The Process

The VCCC is the end-result of CIPRNet in terms of services and the archive of CIPRNet's deliverables. Some of the CIPRNet established services would be, depending on the host partner, maintained and continued after the end of the CIPRNet project. Other advancements will not be maintained lacking time and funding; these will be made visible in the VCCC's CIPRNet archive section. Part of the VCCC is the process which resulted in the founding of the German association 2E!SAC ("Verein" – association with international members by German law).

A number of steps were taken to arrive at the VCCC state and the establishment of 2E!SAC:

- With respect to the VCCC technical state:
 - The current state-of-the-art reached by CIPRNet including technologies such as CIP-Cast and CIPRTrainer, as well as services such as CIPedia© and a Massive Open Online Course (MOOC) training (see Sections 8 and 9).
 - The developed VCCC web portal provides access to these services and achievements.

- With respect to the establishment of the 2E!SAC:
 - Inputs from the CIPRNet Advisory Board and from potential EISAC stakeholders were acquired on the way forward with respect to the long-term EISAC vision and organisational structure.
 - The earlier DIESIS business plan study for an EISAC was used as a discussion template for the long-term view of an EISAC. Information about medium and long-term vision and plans of the consortium partners about the CIP/CIR domain were collected [CD4.3]. That information was discussed at workshop 1 and during subsequent meetings discussing EISAC in the long run and 2E!SAC as a way forward, and
 - Fraunhofer and TNO drafted the articles of the 2E!SAC association, which subsequently were checked and enlarged by the legal departments of the founding partners, the local German tax office and the German notary (see Annex A).
 - The establishment and founding assembly meeting was in Sankt Augustin, November 22, 2016.

3 The Main Services offered by the VCCC

Table 1 lists all the services that CIPRNet has defined for its activities. We have grouped the services by topic into larger service areas. Also, Table 1 indicates examples of how the services could be transferred to or further developed for EISAC. In this section, we would characterise the service groups and services only briefly. More detailed description will be provided in later sections of this document.

3.1 VCCC service offerings

Service group 1 – Advanced Decision Support

This service group refers to the two new technological capabilities that CIPRNet has produced:

- The Decision Support System CIPCast, aimed at supporting CI operators and civil protection agencies
- CIPRTrainer, a training system that enables performing ‘what if’ analysis in complex simulated crisis scenarios for exploring different courses of action and using consequence analysis

Services that remain active beyond CIPRNet are the demonstration services of the two capabilities described in [CD4.5] and [CD4.6].

Service group 2 – Training

This group comprises as offerings during the term of CIPRNet: CIPRNet courses, Master Classes, and lectures, training support by CIPRTrainer and the demonstration of that system. A service that would remain active beyond CIPRNet is the MOOC (Massive Open Online Courses) platform offered by UCBM. It contains CIPRNet training material, video recorded lectures, and a course questionnaire. Also, CIPRNet has issued a textbook on its training material.

Service group 3 – Information Brokerage on CIP/CIR

This group of services refers to glossaries, repositories, and databases related to CIP/CIR, offered by CIPRNet as CIP/CIR Community service.

Service group 4 – Research Platform for CIP/CIR Collaboration

This group bundles CIPRNet repositories and activities related to RTD. Repositories include a CIP EU research project list, a CIP/CIR bibliography, and the inventory database of CIPRNet partners’ knowledge. An initial CIP MS&A reference set and links to models and (not sensitive) data are directed towards facilitating Modelling, Simulation & Analysis (MS&A) in CIP.

Service group 5 – Dissemination

This group of services comprises the support of CIP/CIR related conferences like CRITIS (<http://www.critis2016.org>), netonets (<http://www.netonets.org>), TIEMS (<http://tiems.info>), ESReDA (<http://www.esreda.org>), and the newsletter ECN (European CIIP Newsletter). (<http://ciprnet.eu/ecn.html>) CIPRNet partners will remain active in supporting CIP/CIR related conferences. The continuation of the newsletter ECN is depending on continued funding.

It should be noted that not all of the initial ideas on VCCC services were relevant. One such idea was a page with a list of international CIP/CIR job vacancies, initially to be filled by

CIPRNet partners' vacancies. There were only very few contributions, and therefore the page never gained popularity. This type of job vacancies is not common at research organisations and universities, and if there were any, they were often hard to find in organisations of the size of Fraunhofer (24,000 employees) or CEA (15,000). Since the process of identifying such job vacancies should be done manually, it would have required monthly or bi-monthly manual searches. Therefore, the cost-benefit ratio was prohibitive, and we decided to drop that service.

Table 1: Service groups and services

SERVICE GROUP	Services	Examples in VCCC or envisioned in EISAC
Advanced Decision Support		
	- Decision Support System (DSS)	CIPCast demonstration CIPCast full service
	- What-if Analysis (WIA) in DSS	CIPRTrainer Web Demonstration Service
Training		
	Master Class CIP/CIR	Master Class offerings, e.g. CIPRNet Masterclass
	CIP/CIR course	CIP/CIR course offering, e.g. CIPRNet Course inside the post graduate Master in Homeland Security
	Lectures	Lectures by CIR/CIP experts
	MOOC CIP/CIR lecture offerings	Massive Open Online Courses (MOOC)
	Training support	CIPRTrainer demonstration CIPRTrainer (full) in Germany with embedded what-if analysis (WIA)
Information Brokerage on CIP/CIR		
	CIP/CIR Community service	CIPedia© including - CI Sector Glossaries - CI/CII Organisations - List of CIP/CIR Acronyms
	CIP/CIR Policies and Good Practices	Database access (closed service for consortium)
	Knowledge brokerage	Ask The Expert (ATE)
	Expert access	CIP/CIR consultancy Expert speakers
Research Platform for CIP/CIR Collaboration		
	Web Portal Research Platform	=> EISAC.EU with links to national nodes
	- Modelling, Simulation & Analysis	- Initial CIP MS&A reference set - List of Models and Data
	- Repository	Database access (closed service)
	- CIP research project list	CIP EU Research project list
	- CIP/CIR bibliography	CIP/CIR bibliography
Dissemination		
	Support CIP/CIR conferences	Support CIP/CIR conferences - list of events
	Support C(I)IP Newsletters	C(I)IP Newsletters - ECN (repository; requests) - link: DHS CIP Newsletters

3.2 Web portal

All CIPRNet activities have been documented and disseminated via CIPRNet's comprehensive website ciprnet.eu. The website has been deployed by Mid-2013, shortly after the start of CIPRNet. It has been further developed using a staged roadmap described in deliverable [CD8.110]. In 2016, the website has experienced a visual makeover (Figure 1), and its pages have been reorganised to prepare for the service-oriented view of the VCCC as the VCCC portal. Also, the makeover and reorganisation addressed a reviewer request for improving the bounce rate of the website (ratio of visitors who stayed on the website to visitors who left the website after visiting one page).

The CIPRNet website (Figure 1) will be maintained up-to-date until the end of CIPRNet. As a final and parallel activity, the website will provide access to all VCCC services that remain active after the end of CIPRNet (at least until the end of 2018), including those that are provided as standalone websites at the time of completing this report. Ideally, the VCCC portal would be taken up by EISAC.



Figure 1: CIPRNet web portal as of 11.01.2017

The main structure of the web portal ciprnet.eu comprises (11.01.2017):

- 1 About CIPRNet
- 2 News
- 3 CIPedia©
- 4 Publications (refereed publications, newsletter ECN, deliverables)

- 5 Services – Overview (access to ten services, Figure 2)
- 6 New CIP capabilities (descriptions of advanced decision support, “what, if ...” analysis, “Ask the expert”, secure design of Next Generation Infrastructures, VCCC)
- 7 Training – Overview (End-user training (Master Classes, CIPRNet Courses), CIPRNet Young CRITIS Award, CIPRNet lectures)
- 8 Events (dissemination events like conferences and cooperation workshops)
- 9 Jobs (links to partners’ advertisements pages)

As of 12.12.2016, the CIPRNet web site recorded over 39,000 views and over 2,100 downloads of documents.



Figure 2: VCCC services page on ciprnet.eu

The CIPRNet website bundles the access to the VCCC services. Users get routed in the following way:

- CIPedia© runs on Fraunhofer’s Wiki farm.
- The ‘Ask the Expert’ service (ATE) is based on access to a database-driven service hosted by ENEA. The consortium internal knowledge repository is integrated with the ATE service interface.
- CIPCast is also hosted by ENEA.
- The web-based ‘what if’ analysis demonstration service demonstration service is hosted on a Fraunhofer server.
- The CIPRNet MOOC Training platform is hosted on UCBM servers.

All these services can get accessed via the CIPRNet service page / VCCC web portal as a single point of entry to the distributed set of provisioned services.

3.3 Overview of the VCCC Services

In this section, we will map the services we describe in Sections 4 through 9 to the structure of Table 1 in Table 2. Moreover, the table contains the remainder of the originally in the DoW described services which turned out to be less successful in hindsight. This serves for better orientation of the reader.

Table 2: Services described in this deliverable mapped to the service groups

SERVICE GROUP	Services	Current service in CIPRNet / VCCC described here
Advanced Decision Support		
	- Decision Support System (DSS)	Decision Support System CIPCast, Section 4
	- What-if Analysis (WIA) in DSS	Closed activity, documented in deliverable [CD7.5]
Training		
	Master Class CIP/CIR	Closed activity, documented in deliverables [CD9.51]–[CD9.54] and on the Web Portal
	CIP/CIR course	Closed activity, documented in deliverables [CD9.81]–[CD9.83] and on the Web Portal
	Lectures	Closed activity, documented in deliverable [CD9.70] and on the Web Portal
	MOOC CIP/CIR lecture offerings	CIPRNet MOOC Training Platform, Section 9
	Training support	What-if Analysis in CIPRTrainer and CIPRTrainer demonstration web service, see Section 5
Information Brokerage on CIP/CIR		
	CIP/CIR Community service	CIPedia®, Section 8
	CIP/CIR Policies and Good Practices	Knowledge Repository, Section 7
	Knowledge brokerage	Ask The Expert (ATE), Section 6
	Expert access	Ask The Expert (ATE), Section 6 Expert speakers – not implemented as service. Note that CIPRNet provided many expert lectures documented in deliverable [CD9.70] and on the Web Portal.
Research Platform for CIP/CIR Collaboration		
	Web Portal Research Platform	Web Portal, Section 3.2
	- Modelling, Simulation & Analysis	Closed activity, documented in deliverable [CD4.8]
	- Repository	Knowledge Repository, Section 7
	- CIP research project list	CIP EU Research project list, Web Portal, Section 3.2
	- CIP/CIR bibliography	CIP/CIR bibliography, Web Portal, Section 3.2
Dissemination		
	Support CIP/CIR conferences	Support CIP/CIR conferences list of events on CIPedia®, Section 8
	Support C(I)IP Newsletters	ECN (repository), on Web Portal, Section 3.2

3.4 Community building

One of CIPRNet's goals was strengthening the CIP/CIR multi-communities and making them more coherent. There are basically two large multi-communities, namely the CIP/CIR multi-stakeholder community (e.g. national and EU policy-makers and emergency management, CI operators, regulators) and the CIP/CIR research multi-community (spanning several related disciplines). CIPRNet partners have been seeking contact and built networks with all these stakeholder groups both in one-to-one conversations, and at a large score of national and international CIP/CIR- and MS&A-related events during the whole life-time of the project. This is the basis for the development of a European capability at the long-term starting with the VCCC. Moreover, CIPRNet used the VCCC for community building in the following ways:

- **Collaboration workshops with projects, organisations, and stakeholders.** CIPRNet organised four dedicated collaboration workshops. The first workshop was held as part of an operators' workshop of the European Reference Network in CIP (ERN-CIP). The second workshop was an exchange with the OpenMI organisation and community from the water domain. The third workshop was an exchange with ESReDA on the topic of "Reliability Assessment and Life Cycle Analysis of Structures and Infrastructures". The fourth and final workshop was an international exchange with researchers and stakeholders from the Vancouver/Washington state area/USA on CIP/CIR.
- **Organising conferences.** CIPRNet organised four CRITIS conferences in a row (2013–2016, International Conference on Critical Information Infrastructures Security, <http://www.critis2013.nl>, <http://www2.kios.ucy.ac.cy/critis2014/>, <https://www.critis2015.org/>, <http://critis2016.org>), TIEMS 2015 (The International Emergency Society, <http://tiems.info/tiems-2015-annual-conference.html>), and netonets 2013 (Networks of Networks, <http://www.netonets.org/events/netonets-2013/>).
- **CIPRNet lectures.** CIPRNet organised around 40 lectures, given by CIPRNet experts and by invited lecturers from research and by stakeholders and reached more than 1,100 community members who participated in the lectures.
- **CIPRNet Young CRITIS Award (CYCA).** As a means of capacity building, CIPRNet bestowed three awards for the best CIP/CIR works of young researchers. The award ceremonies took place at the annual CRITIS conferences.
- **CIPedia©.** The online glossary CIPedia© was conceptualised as a Wikipedia-like service to encourage contributions from the multi-community.
- **Stakeholder interactions.** CIPRNet contacted many stakeholders from its initial audiences in several countries. This included CI operators, civil protection agencies, policy level, and more. A detailed list of stakeholder interactions is documented in deliverable [CD2.34], the final dissemination report (forthcoming). In addition, CIPRNet's International Advisory Board consisted of stakeholders who help CIPRNet in shaping its agenda towards producing useful offerings for stakeholders.

All these events (except private stakeholder meetings) have been advertised at the CIPRNet web portal and are still documented there. With all these measures, CIPRNet has reached a high visibility. Evidence for this are, for example, requests from other projects for collocating workshops with CRITIS conference, active collaboration with other projects yielding tangible results, enquiries and expressions of interest from stakeholders in CIPRNet technologies, invitations for keynotes of CIPRNet members, partnering requests from other researchers for new proposals, and two Japanese delegations visiting a CIPRNet partner for gathering information as basis for CIP policy-making in Japan. One of the other CIPRNet partners provided one of these Japanese delegations written information on their CIP/CIIP database.

Moreover, CIPRNet outreached to the international CIP/CIR communities through:

- **ECN, scientific papers and presentations.** A large set of scientific papers (over 50) and presentations (over 200) by the consortium partners as well as a set of over 25 articles in the European CIIP Newsletter (ECN) by both the consortium partners and authors from the networked community of stakeholders.
- **Seeking interactions with stakeholders.**

4 Decision Support System (DSS)

CIPRNet's Decision Support System (DSS) implementation is called CIPCast. CIPCast is available in two different operation modes: (1) *operational* mode to allow the prediction and rapid assessment of the consequences of a crisis scenario in an “operational” mode of operation on a 24/7 basis and (2) *off-line* mode for producing risk analysis starting from synthetically produced events (rather than truly occurring ones) or from synthetically produced damages (rather than by damages produced by true or synthetic events). The CIPCast operational mode will require the setting of dedicated channel of communications between the platform and the end users. For instance, the CIPCast-IT (i.e. a dedicated instance of the CIPCast platform running on the Italian EISAC node) provides an operational service to Areti Spa that is the main electrical distribution operator in Rome. To exchange data and service results with the operator, CIPCast-IT uses a dedicated channel (a VPN site-to-site connection). Using this channel CIPCast-IT acquires actual network configurations from the operator information systems, and provides the output of the service to the operator. The output of the service is the risk assessment of a crisis scenario due to extreme natural events (e.g. heavy rain, flash floods). CIPCast-IT implements several off-line services. These services are accessible through a dedicated web interface. For each of these services, the CIPRNet web portal should make provisions in a way to all the end users to have information on the available functions and visualise the results.

4.1 Current status

The CIPCast-IT platform runs on an ENEA server providing several services to different end-users. In general, the CIPCast-IT services belong to two different categories:

- *Multi-user services.* These services give a common framework for different users in different domains (e.g. weather forecast service);
- *Specific user services.* These services are domain-specific and allow a specific operator to make a thorough analysis about its own domain (e.g. services for electrical distribution network operators, services for local civil protection organisations).

The CIPCast-IT platform implements services that are specific for a given area or territory (i.e. Rome and Florence (Figure 3) metropolitan area).

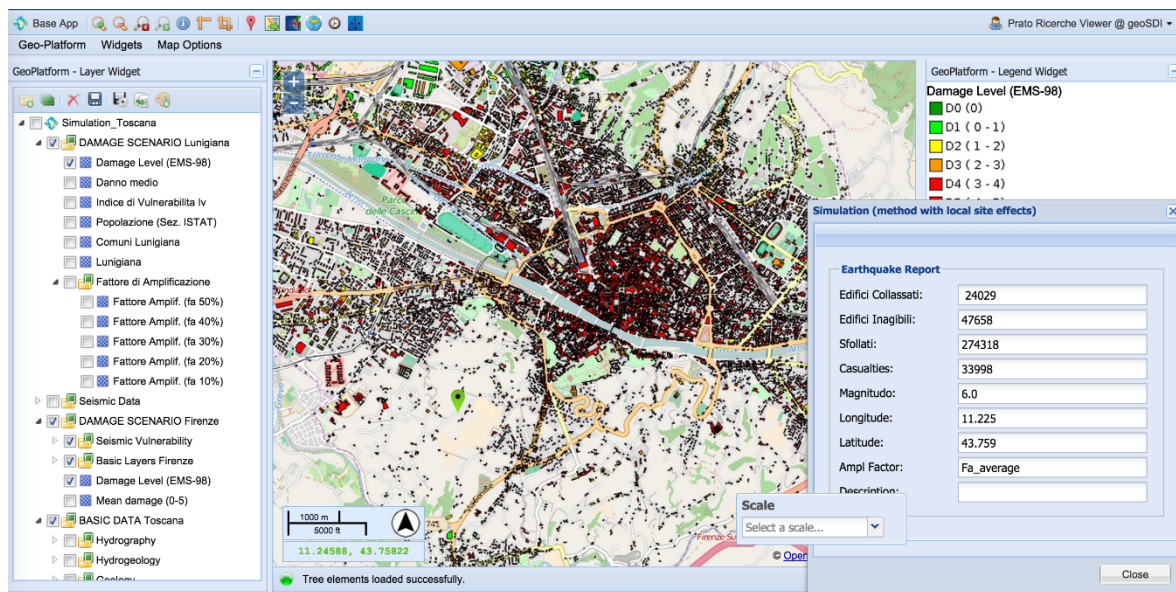


Figure 3: CIPCast-IT screenshot

The CIPCast-IT platform implements a specific user service related to the risk assessment of the electrical distribution network of the Rome metropolitan area. The service, using weather forecasting data and now-casting data related to the Rome metropolitan area can forecast damage scenario involving components of the electrical distribution network (i.e. secondary electrical stations). Then, the platform runs a module to assess the impacts of these failures on the electrical distribution network. The module simulates the electrical operator reconfiguration procedures and the dependency of these reconfiguration actions to the telecommunication domain (the electrical network SCADA system depends on the mobile telecommunication infrastructure). The output of this module is represented by the functioning status profile of each electrical secondary substation as shown in Figure 4.

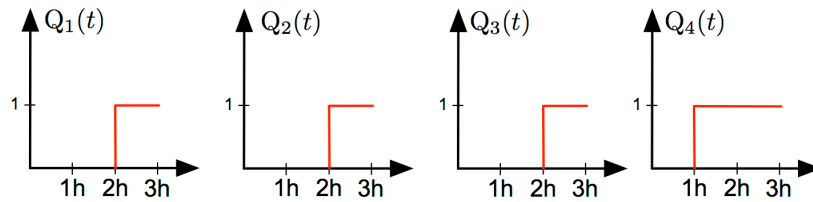


Figure 4: An example of electrical secondary station output profiles

Table 3 shows the services currently implemented in CIPCast-IT. For each of the named CIPCast-IT services in the table, the mode of operation is specified (see also above), the service category in terms of either a broader usage or a usage restricted to specific users, the target end-users, and the area of interest for which decision support services are being offered.

Table 3: CIPCast-IT services

Service Name	Mode of operation	Service category	Stakeholders / end-users	Area of interest
Weather forecast	Operational	Multi users	All stakeholders	Lazio region
Nowcasting	Operational	Multi users	Areti, ATO2, Civil Protection of Rome	Metropolitan area of Rome, Lazio region
Lightning forecast	Operational	Multi users	Areti	Lazio region
Seismic activity map	Operational	Multi users	All stakeholders	Italy
EDN Risk Forecast	Operational/Off-line	Specific users	Areti	Metropolitan area of Rome
WDN Risk Assessment	Operational/Off-line	Specific users	ATO2	Metropolitan area of Rome
Seismic Risk Assessment	Operational/Off-line	Specific users	Florence Municipal Administration	Florence city
Jubilee event management	Off-line	Specific users	Areti	Metropolitan area of Rome

The CIPCast-IT integrates different simulation facilities. Indeed, the platform needs to acquire from internal or external *ad hoc* simulation models the expected geo-physical scenario (with a specific forecast time); this information triggers the evaluation of the damage scenario which is performed by correlating the intensity (the severity grade) of the predicted events and the intrinsic vulnerabilities of the different infrastructural assets present in the hit territo-

ry. In the following the simulation facilities currently included in the platform: weather forecast, the now-casting, the lightning forecast system, the earthquake simulator.

Moreover, the CIPCast-IT includes other modules to complete the Risk Assessment Loop:

- a module for the vulnerability assessment of components of the infrastructure networks affected by extreme natural events;
- a simulator for the assessment of a damage scenario on the electrical distribution network. The simulator (named RecSIM) simulates the electrical network reconfiguration procedures (i.e. the automatic actions and the operator actions performed to restore the correct functioning state of the network);
- a module for the consequence analysis of electrical distribution network failures (i.e. blackout) on different sector of the society (e.g. citizens, services).

4.2 Stakeholders

The main intended stakeholders are CI operators and Crisis management/Emergency management organisations. Currently, the CIPCast-IT platform has been customised for different users:

- Areti spa. Areti is the main utility in Rome for the electrical distribution network. Areti, uses different services of the CIPCast-IT platform (see Table 3). Areti has integrated the platform web GIS interface in the operator control room. Using the interface the operator can monitor the current weather condition and the forecasting data. Within the framework of the Italian project RoMA, the CIPCast-IT platform has implemented a complete Risk Assessment Loop for the Areti operator (the Areti RAL in the following). This specific service implements all functional block of the CIPRNet Risk Assessment Loop as it has been defined in [CD7.1].
- Florence Municipal Administration. The CIPCast-IT implements the Seismic Risk Assessment for the Florence Municipal Administration. Using this service the user is able to simulate seismic events in the Florence area. Using 1) local site information about surface geology and lithology data allowing to properly consider local amplification factors of seismic waves and 2) detailed data about buildings characteristics the service is able to assess the impact of the simulated seismic event on each building of the city.

Other end-users have showed interest to the platform. CI operators for risk assessment of their infrastructures, CI dependency M&S, municipality and local civil protection organisations for natural hazards risk assessment. Therefore, the platform developer team has started several collaborations for customising the platform following the end user's requirements [CD4.6].

4.3 Main achievements

The main achievement of the CIPCast-IT platform is to constitute for the end users a sort of information hub. For example, for the electrical distribution network operator is valuable to see how the reconfiguration actions and the ordinary daily management actions will depend on the weather conditions and on the status of other critical infrastructures as the telecommunication network and urban mobility systems. All this information can be analysed and visualised using the platform web GIS interface. Another important point for other stakeholders as for example crisis management/emergency management organisations is the possibility to rely on a user-friendly GIS interface to perform GIS analysis and data mining tasks. The CIPCast-IT implements GIS analysis and data mining procedures following the end user requirements and makes available these procedures through dedicated widget on the web GIS interface.

4.4 Next planned steps

At the moment, the CIPCast-IT developer team is working on two main platform customisation tasks:

- L'Aquila Municipal Administration. In this case the end user showed interest for the public data layers already available on the CIPCast-IT platform. In addition, the end user will provide proprietary data (e.g. stream video data) that will be integrated in the platform to perform risk assessment analysis on all municipal territory and to provide an alerting system in case of possible dangerous situation.
- A gas DSO (Distribution System Operator) requested a specific service of the CIPCast-IT platform to perform the risk assessment of their infrastructure components (mainly pipelines) w.r.t landslides and earthquakes.

From a long-term perspective, ENEA is looking for national or regional founding to

- Improve the services already available.
- Improve the data acquisition procedures (e.g. remote sensing).
- Integrate Augmented Reality devices to improve the procedures devoted to the emergency management.
- Find a partner for the operative management on a 24/7 basis and all security certification the platform services.
- Create a public company to create and manage the EISAC.IT node.

5 What-if Analysis in CIPRTrainer

CIPRNet's 'what if' analysis capability based on federated modelling, simulation and consequence analysis is manifested in the application CIPRTrainer [CD6.5]. CIPRTrainer is a prototypical system that offers crisis managers at the tactical level in civil protection an additional, added-value training opportunity. Trainees can explore different courses of action by 'going back in (simulation) time', taking a different action and thus following a different course of action. CIPRTrainer uses new consequence analysis methods that allow trainees to analyse the influence of their decisions on the overall evolution of the crisis scenarios. By comparing the outcomes, trainees can assess which course of action was most beneficial in terms of less damage to humans, the environment, and the economy. The crisis scenarios that have been modelled and simulated for and in CIPRTrainer include effects on Critical Infrastructures and address cross-border aspects. The chosen geographical area of the scenario is a border region of the Netherlands and Germany.

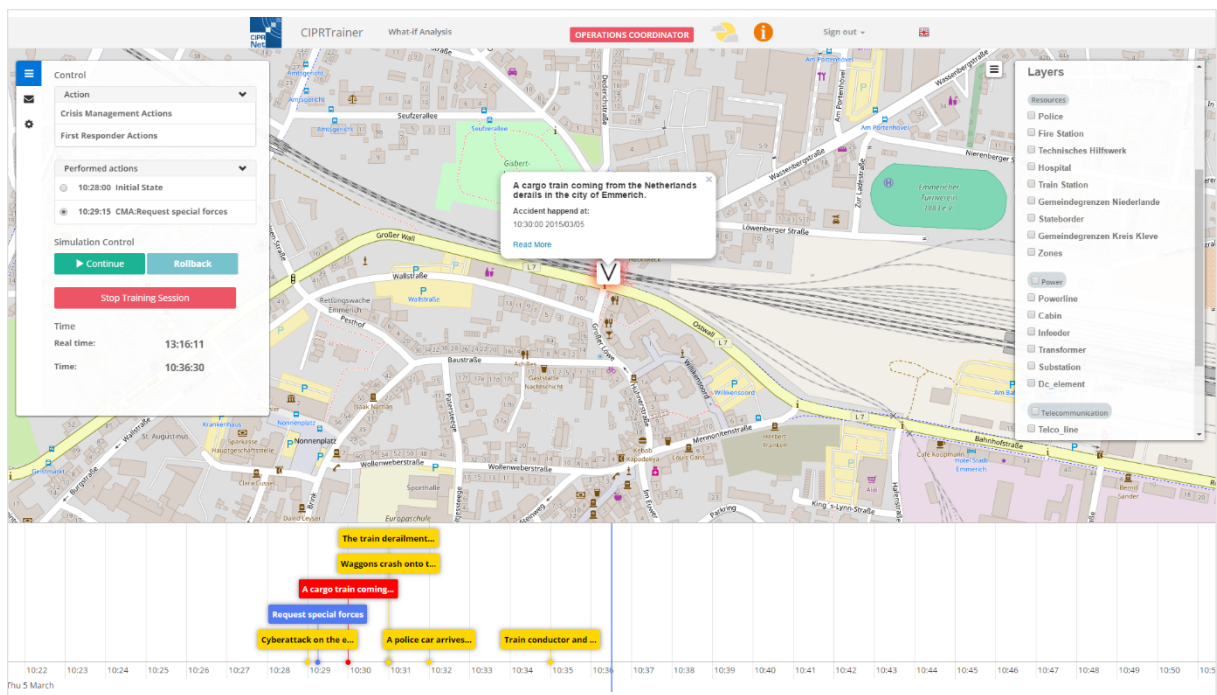


Figure 5: CIPRTrainer screenshot as of 22.11.2016

5.1 Current status

CIPRTrainer is implemented as a distributed system, consisting of a federation of CI simulators (SINCAL (electricity, commercial), ns-3 (telecommunication, free), and OpenTrack (railway, commercial)), a scenario database, a consequence analysis module, and event processor as a backend, and a Graphical User Interface (GUI) as a frontend [CD6.4]. The CIPRTrainer frontend GUI is web-based, but currently only one instance of the system can run at any given point in time, since the SINCAL simulator license is protected with a dongle. Also, using the system requires training.

Therefore, we have chosen to design the associated planned web services as a demonstration service with limited functionality. The purpose of the CIPRTrainer Demonstration Web Service (CWS, Figure 6) is showing how the system can be used for performing 'what if' analysis and for exploring different course of action. Users do not interact with the full CIPRTrainer system, but with a special service that displays sequences of recorded CIPRTrainer sessions

(screencast video, cf. Figure 5), showing the evolution of a crisis scenario. The CWS allows limited interaction with users at predefined moments in one of the two CIPRTrainer scenarios. For instance, the CWS shows the beginning of a crisis scenario, and at a certain moment, users can select one of two possible actions. The CWS then shows the course of action for the selected action as a video sequence, and at the end the user can go back to that decision point and select the other alternative. After having seen both possible crisis evolutions, the user can use the CWS for comparing the different outcomes (consequences). Table 4 shows the differences between the full CIPRTrainer system and the CIPRTrainer Demonstration Web Service [CD4.6].

Table 4: Comparison of functionalities between the full CIPRTrainer system and the CIPRTrainer demonstration web service

	Full CIPRTrainer system	CIPRTrainer demonstration web service
Exploring different courses of action	Y	Y
Comparing different consequences	Y	Y
Experiencing the behaviour of CI under severe perturbations	Y	Y
Rollback of simulations	Y	N
Multi-session usage	N	Y
Use without intensive guidance	N	Y
GIS layers presentation	Y	N

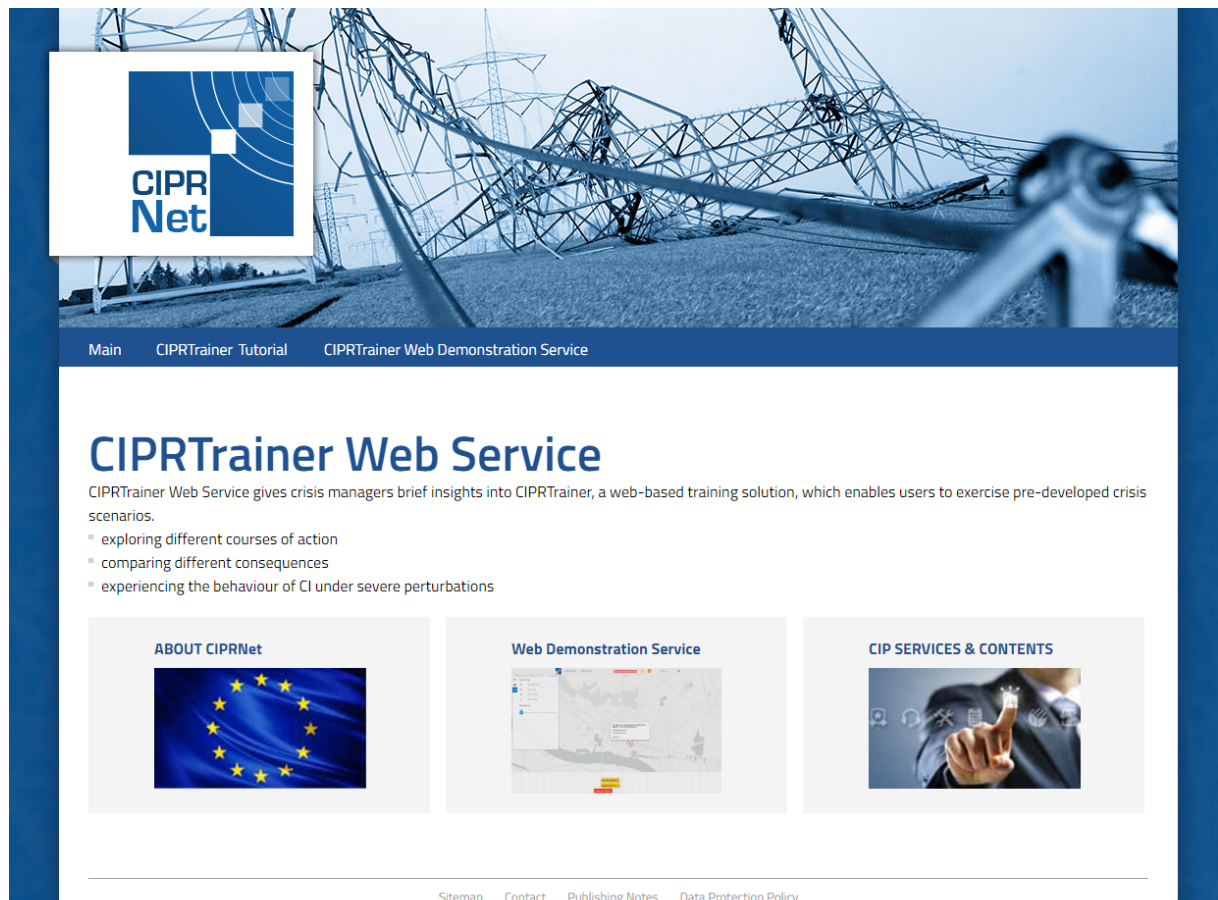


Figure 6: CIPRTrainer Web Service as of 11.12.2016

5.2 Stakeholders

CIPRTrainer is mainly aimed at two groups of stakeholders:

1. Crisis managers in civil protection at the tactical level
2. Institutions for training crisis managers

It provides—as written above—a new capability and additional training opportunity for the first group, and a new training tool with added value for the second group.

CIPRTrainer has been demonstrated several times. There were two dedicated events at which end-users and stakeholders could test the system: the CIPRNet course in the post-graduate Master in Homeland Security study at UCBM in Rome (July 2016, [CD9.83]) and the CIPR-Net Master Class 3 in Sankt Augustin, Germany (November 2016, [CD9.54]). Participants at both events have evaluated CIPRTrainer and the training events. As to be expected with a new prototypical system, there have been many suggestions for improvements of the system, other scenarios, and the duration of the training lectures. Details can be found in [CD9.54] and the forthcoming [CD6.6].

Participants of the CIPRNet Course of July 2016 wrote a very positive article about their experience with CIPRTrainer, published in the newsletter ECN (volume 10, number 3 / issue 25), which is contained in deliverable [CD8.522].

5.3 Main achievements

The main achievement of CIPRTrainer is that it has created a demonstrator of a new capability for end-users, based on modelling, simulation, and analysis of Critical Infrastructures. CIPRTrainer

- bundled and integrated existing technologies,
- further developed essential parts like the middleware for making individual, independent simulators work as a federation,
- developed new and innovative methods like consequence analysis and the method for ‘going back in time’, which are both prerequisites of ‘what if’ analysis, and
- set up models of complex cross-border scenarios involving the behaviour of CI under perturbations.

The intended added value of CIPRTrainer for crisis managers in civil protection at the tactical level is an additional training opportunity with innovative methods for getting insight on the role of CI in complex crisis situations and for the management of these. The intended added value of CIPRTrainer for institutions for training crisis managers is access to a new tool for crisis management training.

5.4 Next planned steps

The developers of CIPRTrainer have received many suggestions of additional functionality and improvements, both from inside the consortium and during the demonstration and training events. For instance, the functionalities regarding the trainer role are currently only rudimentary. It would be desirable that trainers could also intervene during the scenario, introducing an element of surprise. Note that it is not the role of research projects to produce ready-made products. To assess the level of readiness of research results, the EU has defined so-called “Technology Readiness Levels” (TRL¹). Our own assessment of CIPRTrainer would

¹ http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf

rate its TRL as ‘TRL 6’, defined as “technology demonstrated in relevant environment”, since CIPRTrainer has been demonstrated at two training events, one of them a dedicated university degree course for security professionals.

Any further work on CIPRTrainer and the CIPRTrainer Web Service depend, of course, on continued funding opportunities. The developers are members of consortia that have submitted new proposals, but results are pending by the time of writing this deliverable. One partner, UCBM, is interested in using the system for the training at the Master in Homeland Security study. UCBM and Fraunhofer are discussing the possibilities and necessary modifications.

In the long run, CIPRTrainer could become one of the prominent assets of EISAC. Establishing an EISAC would probably open new opportunities for further developing CIPRNet technology and increasing its TRL.

6 Ask the Expert

The Ask the Expert service has been deployed by January 2015. At the beginning, the service has been accessible only for CIPRNet staff members. After the project's internal test and the implementation of suggested improvements the service has been linked with the CIPRNet web portal (www.ciprnet.eu). The "Ask the Expert" (AtE) service is intended to provide the CIP stakeholders with following capabilities [CD5.3]:

- To request information about any CI aspect related to CI operation, threats, management, etc.
- to get feedback on such query from the CIPRNet community of experts.

6.1 Current status

Through the CIPRNet "Ask the Expert" service users can submit questions and requests for information from the CIP domain. Questions can be related (however, not limited) to:

- Technical CIP-related issues
- CI management, crisis management for CI
- CI-related documentation, e.g. national and EU regulations, policies, public reports and statistical data
- Practical aspects of CI functioning

A set of experts both from CIPRNet consortium and related institutions are let available to cover all different subjects regarding to Critical Infrastructure Protection and Resilience.

The application run on the ENEA CIPRNet server at the following address: <http://ciprnet.casaccia.enea.it/ate> and it has been implemented using the PHP framework Yii that comes with many useful features: it uses the Model View Controller (MVC) paradigm, it allows the easy development of fast and secure (input validation, output filtering, SQL injection and Cross-site scripting prevention) DAO/ActiveRecord oriented applications, I18N/L10N, caching, authentication and role-based access control.

Currently, the service has the following user roles:

- Admin. The user with the Admin role can perform all the service administration tasks:
 - Manage the service users and roles
 - Manage the experts
 - Manage the assets
- Expert. The pool of experts can contribute to the requests discussion and, if needed, they can close a request.
- Authenticated. The authenticated users are the service end users. They can submit request, follow and contribute their own request discussions
- CIPRNet. The users with the CIPRNet role have access to the CIPRNet Inventory Database which aims to collect in a systemic approach information on available CIP related methods, platforms and test beds, infrastructures, research tools, technologies, models, data sources, and other CIP- and CIP MS&A-related expertise known by the CIPRNet community [CD4.2]. The ATE service relies on the data stored within Inventory Database (e.g. assets, experts, expertise data).

Before using the service the users need to register using the service registration form. After the registration procedure, the user will become an Authenticated user. Then, using the ATE web forms, he/she can create a request (see Figure 7) specifying a subject, a short description, the type of request (technical CIP issue, CI management, crisis management for CI, CI-related documentation, regulations, policies, public reports and statistical data, practical aspects of CI

functioning) and the requested expertise. The ATE application notifies by email the experts that have the requested expertise. Then, the involved experts can view the request details and they can participate to the request discussion. Eventually, an expert can close a request. Mail notifications about new created requests are sent to the asktheexpert.ciprnet@enea.it mail box. This mail box can be used (by a de facto Super Moderator) to supervise the requests life-time (e.g. to avoid the no request remain in the open state forever).

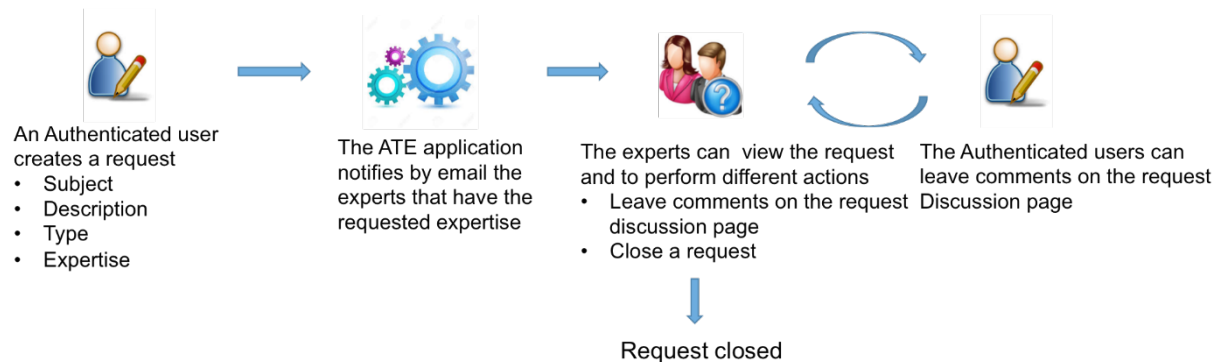


Figure 7: The ‘Ask The Expert’ request management workflow

Currently, the implementation of the service comprises:

- Authenticated user functionalities: request submission, profile management
- Admin functionalities
- User Login and Registration
- Request discussion pages OK
- Search functionalities
- all web input forms and interfaces have been improved to include: input validation, SQL injection and cross-site scripting prevention
- Graphical improvements to improve accessibility

The service will be improved implementing:

- Stat reports (FAQs, service usage, experts usage....)
- Request filtering mechanisms (to assign the status of NOT PERTINENT and or SPAM to a request)
- Authenticated users filtering mechanisms (to ban authenticated users after several NOT PERTINENT and/or SPAM requests)

6.2 Stakeholders

The CIPRNet Ask the Expert (ATE) service has the following stakeholders:

- Governmental CIP/CIR policy-makers,
- CI operators,
- Public crisis management/emergency management organisations,
- Private sector crisis management/emergency management (e.g. of CI operators),
- CIP R&D community (academic and applied R&D)

Currently, the service has been used mainly by CIP R&D community. In the future, the ATE pool of experts and users should comprises people from the other stakeholder groups.

6.3 Main achievements

The service provides a framework that will allow different kind of users to effectively collaborate on different topics in the CIP field. End users of each of the mentioned stakeholder groups may receive quick referrals to assets and knowledge, which may help them fast.

6.4 Next planned steps

During the service test and validation phase many suggestions have been provided to make the service more user-friendly and effective. Regarding the TRL, the ATE service can be classified as TRL 7 “System prototype demonstration in operational environment”. Depending on the funding opportunities the service TRL can be raised to higher levels. Indeed, dissemination and exploitation activities will increase the number of users and experts. Suitable and user-friendly user feedback features may be implemented to improve the service and to implement new functionalities.

7 Knowledge Repository

7.1 Current status

The CIPRNet knowledge repository was developed as part of Joint Activity 4.1 “Inventory of expertise” under coordination of CEA. In a systemic approach base information on available CIP related methods, platforms and test-beds, infrastructures, research tools, technologies, models, data sources and expertise known by the CIPRNet community was collected by the partners as part of the step-up to the integration strategy. This information was converted into a web-based database tool or *knowledge repository*. This database was integrated with the ATE service access page. The service is run and maintained by ENEA.

A login is required to access the database. Depending upon the user status, certain rights (view, add/update, system admin) are granted.

During the project lifetime, the tool’s data set of assets has been maintained and updated to provide CIP reference material for CIPRNet’s community. An asset was defined as a CIP/CIR and CIP/CIR-related methodology, method, platform, test-bed, infrastructure, research tool, technology, model, data source, report, and any other form of CIP/CIR- and modelling, simulation and analysis (MS&A) expertise.

The database also contains pointers to the existence (not the content!) of sensitive international documents and other assets that have been identified by the CIPRNet consortium partners. Depending on the clearance level of the user (provided by the partner main contact), a simple need-to-know access control mechanism restricts the user’s view on the set of database records.

7.2 Stakeholders

The intended set of stakeholders includes the Network of Excellence partners, initially personnel of the CIPRNet project partners, which have been granted access to the knowledge repository. On a case-by-case basis, this community may be extended upon agreement of the project partners.

7.3 Main achievements

The knowledge repository allows the Network of Excellence partners to find identified CIP/CIR-related assets. Publicly available documents can be accessed directly, otherwise one may ask the asset owner for more information or access, eventually using the national Network of Excellence partner as a trusted intermediary. The added-value is that each of the Network of Excellence partners has access to the wide set of knowledge known by the expert community.

A deep analysis of the set of assets in the knowledge repository was made in deliverable [CD4.3] as a step-up for the Network of Excellence integration strategy leading up to joint project proposals and 2E!SAC in the short term and ultimately to EISAC by 2020. At the time of writing of [CD4.3] (August 2014), the knowledge repository contained 194 assets. The current count of the number of assets early January 2017 is 401. The tables Table 5, Table 6, and Table 7 below contain a summary of the set of records in the repository from various points of view.

Table 5: Number of items contributed per partner organisation (status January 6th, 2017)

Organisation	Number of assets
CEA	20
Deltares	28
ENEA	25
Fraunhofer	117
JRC	29
TNO	113
UBC	4
UCBM	13
UCY	5
UTP	14
Other	45
Grand total	408

Table 6: Distribution of assets per CI sector (status January 6th, 2017)

CI sector	Number of assets
All CI sectors	58
Water sector	203
Energy	78
Energy – Power	12
ICT	79
Internet	29
Transport	29
Transport - Road	12
Nuclear Industry	35
Financial	15
Chemical Industry	17
Food	8
Government	51
Health – Emergency services	11
Health - Medicine	6
Research facility	9
Applied	67
Academic	43
Space	21
No CI specified	105

7.4 Next planned steps

The current database was designed as an internal tool. To create an open service to a wide community requires:

1. Redesign of the database search interface.
2. Redesign and more extensive explanatory support for adding and updating records and database fields.
3. Validation tests of the robustness and a security assessment of the web interface to the database.

Currently there are no plans for an extensive upgrade of the repository. Operational availability of the repository in conjunction with the ATE service is foreseen by ENEA for at least the period until end of 2018, with limited effort with respect to granting additional users access to the repository.

The Network of Excellence partners, however, are encouraged to add/update set of assets as sharing pointers to their knowledge and other identified resources and assets is of interest to all.

Table 7: Threats covered by the assets (status January 1st, 2017)

Threat	Number of assets
All hazards	103
CBRE (chemical, biological, radioactive and explosive)	4
Biological threats	1
Cyber attack	32
breach of authenticity	1
Cosmic Radiation	1
Dependency	18
Dependency – all CI sectors	5
Dependency - Chemical industry	2
Dependency - ICT	1
Dependency - Water	1
Dependency - Health	1
Dependency - Transport	1
Dependency - Energy	7
Destruction	6
Destruction - Explosions	3
Destruction – Ballistic threats	1
Destruction - Toxic substances	2
Drought	1
Earthquake	1
Fire	3
Flooding	14
High winds	2
Human failure	1
ICT	1
Technical failure	7
Theft	1
Not specified	212
Grand total	408

8 CIPedia©

CIPedia© is an online community service that provides a glossary of terms related to CIP and CIR and to research in these areas. CIPedia© aims to establish itself as a—much needed but up to the advent of CIPedia© missing—common international reference point for CIP and CIR concepts and definitions. CIP and CIR terminology varies significantly due to contextual or sectoral differences, which, combined with the lack of overarching standardisation, create an unclear landscape of concepts and terms. CIPedia© will not aim at solving such conflicts. On the contrary, 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. Wherever possible, existing international and national standards are used or referred to. CIPedia© does not attempt to decide upon a common definition, as this should be a process achieved collectively by the CIP community. CIPedia© is a collaboration platform that may facilitate efforts towards such a direction, but it will not act as a moderator on terminology discussion (Figure 8).

The screenshot shows the CIPedia© Main Page. The page title is "CIPedia© Main Page". The main content area is titled "CIPedia© - A service of CIPRNet". It describes CIPedia© as a "Wikipedia-like online community service" focusing on Critical Infrastructure Protection (CIP) and Resilience (CIR)-related issues. The diagram in the center illustrates the service's goals: "get informed", "discuss", "collaborate", and "advance". The diagram also shows various stakeholders and their roles: "Operators", "Policy makers", "Authorities", "Manufacturers", "Laboratories", "Researchers", and "Public". The diagram also shows "Standards", "Policy Documents", "Regulations", and "Best Practices". The diagram also shows "KNOWLEDGE" and "Glossary of CIP Terms".

The "CIPedia© from A-Z" section lists terms under the heading "A":

- Acceptable Risk
- Accessibility
- Accessible
- Accident
- Adaptation
- Adaptation Assessment
- Adaptation Options
- Adaptation Strategies
- Adaptive Capacity
- Aftermath Crisis Management
- Agent-based Simulation
- All Hazards
- Asset

The "D cont." section lists terms:

- Decision Support
- Decision Support System
- Defence-in-Depth
- Defense Critical Infrastructure
- Dependability
- Dependency
- Detection
- Disaster
- Disaster Recovery Plan
- Disaster Risk
- Disaster Risk Management
- Disaster Risk Reduction
- Discrete Event Simulation

The "N cont." section lists terms:

- National Risk Assessment
- National Risk Registry
- National Safety and Security
- National Security
- Natural Disaster
- Natural Hazard
- Need-To-Know
- Network
- Network and Information System
- Next Generation Infrastructure
- Non-repudiation

The "O" section is empty.

Figure 8: CIPedia© main page as of 11.12.2016

8.1 Current status

CIPedia© has been implemented using the MediaWiki framework that is also used by Wikipedia. Therefore, CIPedia© pages look similar to Wikipedia pages, and they can also be edited in the same way. CIPedia© is hosted on Fraunhofer's Wiki farm, accessible via clopedia.eu. The chief editor is a researcher of the European Commission's Joint Research Centre (JRC) in Ispra, Italy. Significant contributions in content are also provided by TNO in a regular basis.

Besides **definitions of terms**, CIPedia© offers links to **CIP/CIR policy documents**, to **international glossaries**, and more. As additional information to CIPedia© users, it offers also

- A list of past, current, and forthcoming **CIP Conferences** (Figure 9)
- A list of **CI Sector Glossaries** and links to these (Figure 10)

- A list of **CI/CII-related Organisations** and links to these (Figure 11)
- A link to the **VCCC (CIPRNet Home Page)** (external link)
- A link to the **VCCC/CIPRNet CIP bibliography** (external link)
- A page containing a **list of acronyms** used in CIPedia©

CIP Conference List

List of Conferences on Critical Infrastructure Protection (CIP) and Civil Protection

Year	Acronym	Long title	Date	Deadline	Venue	City	Country	URL
2017	CRITIS 2017	12 th International Conference on Critical Information Infrastructures Security	Early October 2017			Lucca	Italy	
2017	Resilient Cities 2017	8 th Global Forum on Urban Resilience and Adaptation	May 4-6, 2017			Bonn	Germany	http://resilientcities2017.iclel.org
2017	ESReDA	52 nd ESReDA Seminar On Critical Infrastructures: Enhancing Preparedness & Resilience for the Security of Citizens and Services Supply Continuity	May 29-31, 2017	Jan 20, 2017	Lithuanian Energy Institute & Vytautas Magnus University	Kaunas	Lithuania	http://www.esreda.org/
2017		2017 International Urban Security and Resilience Conference, Workshop and Exhibition	May 16-19, 2017			Toronto	Canada	http://carleton.ca/irrg/2017-urban-security-and-resilience-conference-and-workshop
2017	ACM CPSS 2017	3 rd ACM Cyber-Physical System Security Workshop	April 2, 2017	Jan 12, 2017		Abu Dhabi	UAE	http://icsd.i2r.a-star.edu.sg/cps17/
2017	INTRICATE-	5 th International Workshop on Security	March 27-29, 2017	November 15, 2016	Tamkang University	Taipei	Taiwan	http://mykayem.org/IS/submission.html

Figure 9: CIPedia© CIP Conference List page as of 11.12.2016

CI Sector Glossaries Table

				CI Sector Glossaries										
				Sector	All CI	Energy	ICT systems	Transport	State and administration	Media and culture	Supply chains	Water	Finance	Health
Organisation	Long name	Link	Countries	Languages										
IAEA	International Atomic Energy Agency	PDF	International	EN-FR-SP-Russian-Arabic		Nuclear energy								
WHO	World Health Organisation	PDF	International	EN										Glossary c Humanitarian terms
Industry Associations														
AFME	Association for Financial Markets in Europe	Web	Europe	EN									Finance	
ATIS	Alliance for Telecommunication Industry Solutions	Web	USA	EN			Telecommunication							
ENTSO-E	European Network of Transmission System Operators for Electricity	Web	Europe	EN		Electricity transmission								
ENTSO-G	European Network of Transmission System Operators for Gas	PDF	Europe	EN		Gas balancing								
GIE	Gas Infrastructure Europe	Web	Europe	EN		Gas Transmission, Storage, LNG								

Figure 10: CIPedia© CI Sector Glossaries page as of 11.12.2016

Organisation	Long name	Link	Sector(s)	Short description	Resources
INTERNATIONAL					
ITU	International Telecommunications Union	Web	Telecommunication	The United Nations specialised agency for information and communication technologies – ICTs.	CIP resources via search
FIRST	Forum for Incident Response and Security Teams	Web	ICT	FIRST is the global Forum for Incident Response and Security Teams.	Security library and Good Practices
MERIDIAN	MERIDIAN	Web	ICT	The Meridian Process includes the Meridian CIP Directory, the Newsletter "CIP Matters", the Meridian Process Control System Information Exchange (MPCSIE), and guidelines for planning a CIP strategy.	Membership only.
TISP	The Infrastructure Security Partnership	Web	Infrastructure Security	The Infrastructure Security Partnership (TISP) Council facilitates public and private sector collaboration that advances the practice and policies of regional and infrastructure security and resilience. - See more at: http://www.same.org/index.php/component/content/article/1092-tisp-council#sthash.fLDUkdsW.dpuf	
UIC	Union International de Chemin de Fer	Web	Railways	The UIC promotes rail transport at world level and meets the challenges of mobility and sustainable development.	CIP green paper position
European Union					
CIWIN	European Critical Infrastructure Warning Information Network (EU)	Web	ALL	Closed EU community warning network.	
DG HOME	European Union DG Home	Web	ALL	Reducing the vulnerabilities of CI and increasing their resilience is one of the major objectives of the EU. An adequate level of protection must be ensured and the detrimental effects of disruptions on the society and citizens must be limited as far as possible.	Policy documents
EGC	European Government CERTs group	Web	ICT (for ALL)	Closed group of EU national CERTs.	Links to membership resources
ENISA	European Union Agency for Network and Information	Web	ICT	ENISA is the EU's response to the cyber security issues of the EU.	CIP and Resilience program

Figure 11: CIPedia© CI/CII Organisations page as of 11.12.2016

8.2 Stakeholders

CIPedia© is a multinational, multidisciplinary and cross-sectoral web collaboration tool for CIP-related stakeholders, including

- Emergency managers from civil protection agencies
- Decision makers in local, regional, and national crisis management
- CI operators
- CI Researchers
- Other stakeholders: Policy makers and governments, CIP-related facilities and laboratories, and the public at large

Initial reactions were vastly positive. CIPedia© has been used by participants of the VITEX EU-28 crisis management exercise in May 2016. The German Federal Office for Civil Protection and Disaster Assistance (BBK) sent a commendatory message.

On the contributing side, CIPRNet members have provided most contributions. Recently, the Horizon 2020 project RESIN (www.resin-cities.eu) has adopted CIPedia© and contributed definitions related to impacts from Climate Change. Also, the Horizon 2020 Project IMPROVER (improverproject.eu) has contributed several definitions related to CIR. CIPedia© has special categories for project related definitions; current project glossaries on CIPedia© include DIESIS (frozen), CIPRNet (active), IMPROVER (active) and RESIN (active). The International Union of Railways has contributed definitions related to human factors, under a new category called “Human Aspects”.

8.3 Main achievements

The service has experienced an excellent reception from the target communities. Within two years of existence, CIPedia© recorded more than 461,500 views, with a current average of

575 views per day and peak views of up to 1,300 views per day. There are 459 content pages. 345 of these are term-related and contain more than 3,227 definitions from 95 nations in 43 different languages. Languages include the wide set of European languages, Russian, Arab, Bahasa, Malay, Tagalog, Georgian, Hebrew, Turkish, and more. All these figures are as of 09/01/2017, recorded by the standard MediaWiki statistics tool (example in Figure 12) and an Excel sheet.

CIPedia© does not track individual IP numbers or uses cookie technology to track and analyse behaviour of individual CIPedia© users.

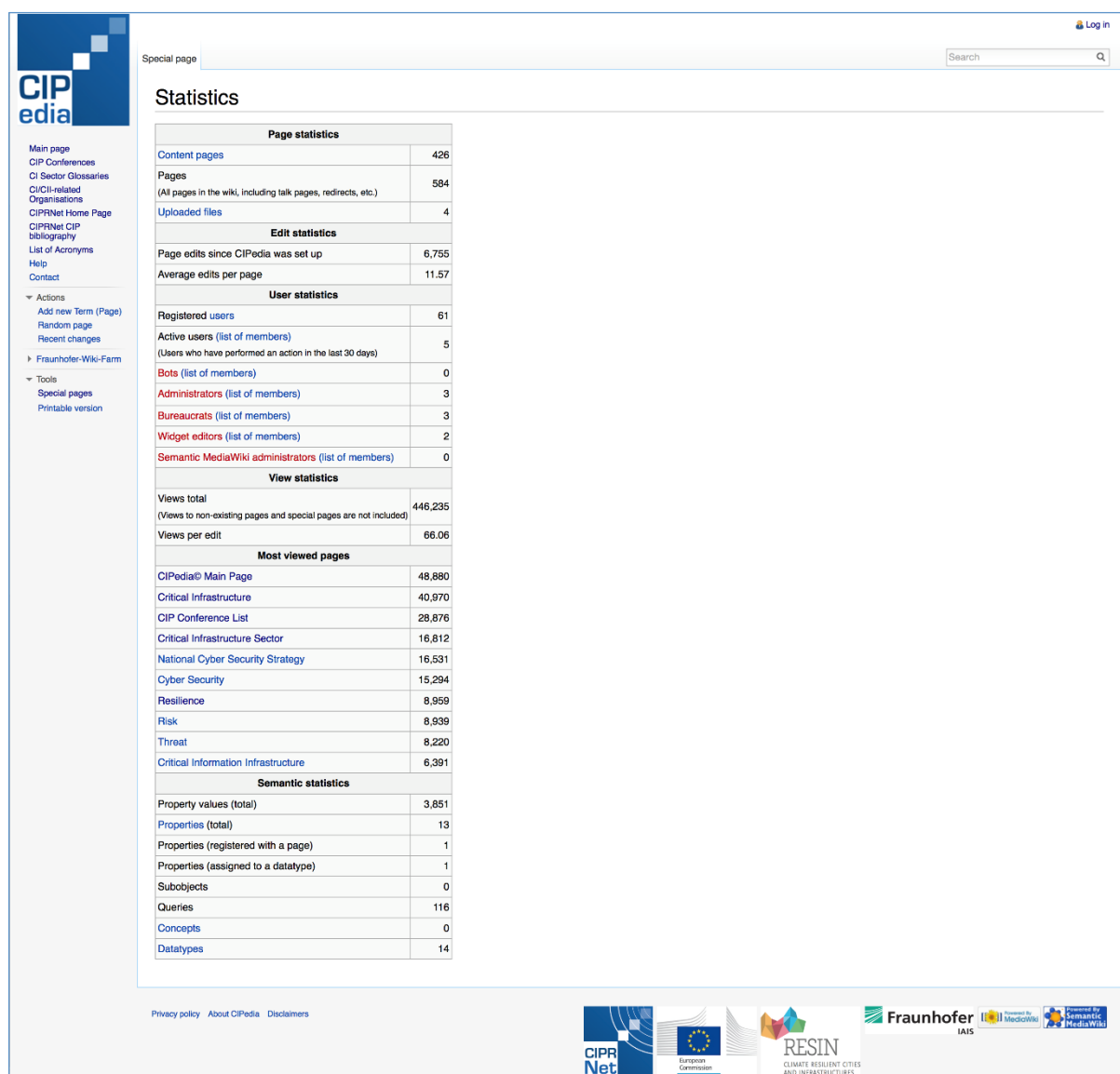


Figure 12: CIPedia© statistics page as of 11.12.2016

There are 61 registered users that have a login and are entitled to make active contributions. Table 8 shows the distribution of users having a CIPedia© login.

The added values for stakeholders are:

- A source of reference definitions of terms related to the multi-disciplinary field of CIP and CIR.

- Lists of sector glossaries and CI/CII related organisations complement the set of definitions and make CIPedia© a comprehensive point of reference information in CIP/CIR.
- Showing national definitions of the most relevant terms side-by-side facilitates cross-border understanding and collaboration.
- Researchers in Secure Societies / CIP / CIR do not need to reinvent the wheel and may use CIPedia© as a tool for creating project glossaries of working definitions quickly.
- Researchers and stakeholders can find dissemination events via the included list of CIP-related conferences.

Table 8: Distribution of users having a CIPedia© login

Type of user	Number of users
CIPRNet	32
RESIN	1
Alumni	7
Researchers	5
Stakeholders	3
System operators	2
Unknown	12

An indirect benefit derived from the use of CIPedia is that each page of definitions contains references and links (in the form of citations) to key CIP/CIR documents, such as national and international policy documents, national and European legislation, international standards and important scientific publications. While looking up one concept or category of concepts and their definitions, the reader can easily identify bibliography that could be used for further study.

Table 9: Definitions in different languages

341	pages with a definition in English
91	pages with a definition in French
81	pages with a definition in Spanish
61	pages with a definition in Portuguese
61	pages with a definition in Dutch
52	pages with a definition in Czech
49	pages with a definition in German
48	pages with a definition in Italian
44	pages with a definition in Russian
42	pages with a definition in Finnish
36	pages with a definition in Romanian
30	pages with a definition in Arabic
30	pages with a definition in Malay
29	pages with a definition in Slovakian
26	pages with a definition in Polish
24	pages with a definition in Bulgarian
22	pages with a definition in Slovenian
21	pages with a definition in Croatian
20	pages with a definition in Greek

Table 10: Definitions in different languages

113	US definition pages (United States)
68	UK definition pages (United Kingdom)
66	NL definition pages (Netherlands)
62	GE definition pages (Germany)
56	CZ definition pages (Czech Republic)
50	AUS definition pages (Australia)
48	IT definition pages (Italy)
45	FI definition pages (Finland)
44	CAN definition pages (Canada)
43	FR definition pages (France)
42	BU definition pages (Bulgaria)
36	BR definition pages (Brazil)
31	SL definition pages (Slovakia)
30	CH definition pages (Switzerland)
29	PH definition pages (Philippines)
29	TT definition pages (Trinidad & Tobago)
25	CR definition pages (Croatia)
24	SV definition pages (Slovenia)
23	BE definition pages (Belgium)
23	IR definition pages (Ireland)
23	SW definition pages (Sweden)
22	EE definition pages (Estonia)
22	LU definition pages (Luxembourg)

8.4 Next planned steps

The medium-term availability of CIPedia© is ensured at least until October 2018, when the RESIN project ends. The JRC plans and has the capability to maintain (or host if needed) CIPedia© even beyond that date. CIPRNet partners agree that CIPedia© should become a regular service of the European/central node of EISAC.

Short-term updates (by March 2017) in terms of content include the creation of new pages:

- a page listing supporters;
- a page describing the history of CIPedia©;
- a page describing where CIPedia© has been used – Testimonials;
- a page with detailed statistics of CIPedia©².

Moreover, extensions of the service for specific EU communities such as the civil protection community (including PROCIV) are on-going.

Medium-term updates (August 2017) include the creation of EU CIP/CIR Policy pages in collaboration with the EU presidency. A section will be added on CIPedia containing a summary for each EU Member State in collaboration with the EPCIP PoCs. This will allow to

² These are based on the statistics tool of MediaWiki (automatic updates) and on an excel file (non automatic updates).

collect the fragmented information on EU CIP policy, which is already contained on CIPedia© via the definitions pages.

At the time of publication, the structure of contents (template) for each EU Member State profile include:

- Past and Present Initiatives and Policies
- National Risk Assessment,
- National Strategy
- Critical Sectors
- Governance Structure
- Legislation, Regulation & Standards
- Education/Training
- Other information (contact, links)
- Link to definitions

This template can be modified according to the needs and in collaboration with MS representatives in the future. It could be also applied to other countries, should the need arise.

The long-term plans for CIPedia© are that it will be one of the key services of the European/central EISAC node with respect to knowledge brokerage, as this is a service which is needed by most national EISAC nodes and/or Member States.

Further potential of exploitation lies in the fact that CIPedia© contains already significant semantic information on CIP/CIR, which is however loosely structured currently. In the future, CIPedia© could evolve to a CIP/CIR body of knowledge, and form the basis for the creation of CIP/CIR European ontologies and terminology standardisation at a European level.

9 CIPRNet MOOC Training Platform

Following a recommendation of CIPRNet’s reviewers, CIPRNet implemented an e-learning platform for Massive Open Online Courses (MOOC) on CIPRNet’s training material. MOOC is a modern means for increasing the impact of a project’s training activities by reaching a larger and broader audience than with physical meetings alone.

9.1 Current status

The CIPRNet MOOC training platform is accessible at URL <http://www.security-learning.eu/>. Figure 13 shows the home page of the service.



Figure 13: CIPRNet MOOC training platform home page at <http://www.security-learning.eu/>

The current contents (as of 16.12.2016) consists of the following modules:

- **Introduction to CIPRNet**
Introductory presentation describing CIPRNet ultimate goals and how they shall be achieved
- A. **Critical Infrastructure modelling, simulation and analysis**
Notions and theories regarding CI modelling, simulation and analysis
- B. **“What if” analysis and the CIPRTrainer**
“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
- C. **Decision Support System and consequence analysis**
Decision Support System and consequence analysis, description of the DSS tool developed by ENEA within the CIPRNet project
- D. **Model coupling with OpenMI**
Coupling of time-dependent models with the OpenMI standard


Each module structured into one to seven lectures. Each lecture web page provides:

- Details about the lecture and the lecturer


- Video tapes of the lecture (initial set taken at the CIPRNet Course in Rome in July 2016)
- An abstract of the lecture, and a list of topics treated
- The presentation file for download
- References
- Test on comprehension of lecture contents

CIPRTRAINER DERAILMENT SCENARIO WITH CROSS-BORDER ASPECTS
Teacher: Stefan Rilling (Fraunhofer)

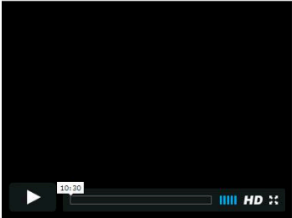
PART ONE



PART TWO



PART THREE




Topics:

- Scenario storyline
- Rules
- Scenario database

Abstract:

This lecture presents the crisis scenarios that have been developed for CIPRTrainer. The first scenario is a derailment of a cargo train in a German city near the Dutch border. The second scenario is a flooding of the river Rhine in the border region between Germany and The Netherlands. Both scenarios have cross-border aspects, and in both scenarios Critical Infrastructures are affected and produce cascading effects.

Download Presentation:




References

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TEST

The tests consist of 4 multiple choice questions randomly chosen, that will assess your comprehension of the lectures. To pass the test, you must answer correctly 3 questions over 4. The system will indicate your correct answers and allow you to re-attempt the test until you succeed it.

When all tests (of the module or of the whole course) are successfully completed, you can apply for your attendance certificate sending an email to info@security-learning.eu. We will check your data and will send you the attendance certificate as soon as possible.



You are logged in as (Log out) | [Contact](#) | [Publishing Notes](#) | [Data Protection](#)

Figure 14: Single lecture page of the CIPRNet MOOC training platform

To attend the course (except for the introductory presentation), visitors must register and collect a username and password. Once attended one of the modules (A to D) or the whole course, a visitor can apply for a certificate of attendance. To obtain the certificate, the visitor must pass all the tests at the end of each lecture. The tests consist of four multiple-choice questions randomly chosen, that will assess the visitor's comprehension of the lectures. To pass the test, the visitor must answer correctly three questions out of four. The system will indicate the correct answers and allow a visitor to re-attempt the test until success. When all tests (of the module or of the whole course) are successfully completed, the visitor can apply for an attendance certificate sending an email to info@security-learning.eu. The operators of the service will check the data and will send the requesting visitor the attendance certificate.

9.2 Stakeholders

The intended set of stakeholders of the CIPRNet MOOC Platform includes:

- Professionals in crisis management at tactical level in Civil Protection
- CIP Researchers and experts from different research communities (European and non-European)
- Stakeholders from Critical Infrastructures' operators
- Students in the area of security

9.3 Main achievements

The CIPRNet online course, delivered at the end of November, has been thought as a way to continue providing training activities also after the project ending and reach a larger and broader audience than with physical meetings alone.

The online course has been announced during the third edition of the CIPRNet Master Class, held at Fraunhofer IAIS the 23rd and 24th November 2016. All the attendees to the Master Class have been invited to register on the website for downloading lecture materials and references, and to pass the word to their colleagues that may be interested in CIPRNet online course topics.

After a stress test phase made by internal users, the online course has been also announced on the CIPRNet website (20.12.2016). Visits at the website, 22 days after the launch of the online course, at 16th December 2016 are still low (in the table below, visits per week), and the registered users are 7 (of which 3 from research/academic institutions outside the consortium from Cyprus, Greece, Sweden). For this reason, further dissemination efforts are requested.

Table 11: Visits to the CIPRNet MOOC platform in November and December 2016

Period ending (Week)	Authenticated user on front page	Guest	Student	All
12 December 2016	3	19	7	29
5 December 2016	4	37	22	63
28 November 2016	175	458	208	841
21 November 2016	49	210	105	364

9.4 Next planned steps

The MOOC platform will be part of the EISAC strategy for the creation of a common base of knowledge and competences. The platform should be enriched with new modules and lectures promoted by CIPRNet Consortium members.

All the partners will promote and disseminate the MOOC, moreover among others, an item on CIPedia will be created (since its wide visibility), and the publishing of the CIPRNet Training Textbook will enhance the online course visibility.

The MOOC platform will be disseminated and used within the next editions of the post graduated Master in Homeland Security (UCBM).

10 Generic Aspects of the Services

10.1 Content Security

The contents of all CIPRNet and VCCC web services have been security assessed by CIPRNet's Security Advisory Group (SAG). The SAG checks all public material of CIPRNet with respect to sensitive information including privacy-related issues in alignment with the General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679) (GDPR). This includes also the contents of the web pages that CIPRNet maintains.

10.2 IT security

For technical, security and license reasons, the services currently cannot be hosted on a single web server. The IT security of the websites offering the CIPRNet and VCC services is ensured by the IT departments of the CIPRNet partners who operate these servers. In addition, one CIPRNet partner has conducted penetration tests of the CIPRNet webbased-services, leading to the discovery of a couple of security holes that have been closed.

10.3 Compliance

All CIPRNet and VCCC web services are compliant with the national regulations of the organisations that provide these services. The CIPRNet main website and CIPedia© are operated by Fraunhofer. Both websites contain publishing notes and a description of the data protection policy applied. Regarding the CIPRNet web portal at ciprnet.eu, visits are statistically analysed using the analysis tool Piwik. Piwik traces IP-numbers for creating the data basis to be analysed. Users of the website have the possibility of 'opt out', that is, to make Piwik ignore their IP-numbers. CIPedia© does not trace IP numbers; it just counts page views in general. Therefore, no 'opt out' feature is necessary for that service.

All images provided on the CIPRNet and VCCC web portals are either own creations of CIPRNet partners or images that have been acquired at commercial digital image services.

10.4 Ethical aspects

The greatest concern regarding potential ethical issues in CIPRNet is related to the handling of data of Critical Infrastructures. No such data is accessible to users of the CIPRNet and VCCC web portals. CIPRNet has used public data where available and has created realistic but artificial data for models used in some of its capabilities. Wherever real data needed to be used, these were handled on a 'need to know' basis within a secured and restricted service. That is, only CIPRNet members or clients who need access to such data for executing their work get the access.

10.5 Disclaimers

The CIPRNet and VCCC web services contain the mandatory disclaimers that the EU as a funding agency requires.

11 From the VCCC towards 2E!SAC

11.1 Establishment of The German Verein (Association) 2E!SAC

On November 22, 2016, members of the CIPRNet consortium founded the non-profit association by German law called “2E!SAC – Verein zur Verbesserung der Resilienz vitaler Infrastrukturen in Europa” (English: Association for improving vital infrastructure resilience in Europe). The founding assembly took place in Birlinghoven Castle on the Fraunhofer campus in Sankt Augustin, Germany.

Founding members from the CIPRNet consortium are: Fraunhofer, TNO, ENEA, CEA, University of Cyprus, UCBM, and Acris. There is also one member from outside CIPRNet, namely the Spanish research organisation Tecnalía. The first elected board of 2E!SAC consists of Dr.-Ing. Erich Rome (Fraunhofer, chairman), Dr. Vittorio Rosato (ENEA, vice chairman), and Dr. Marieke Klaver (TNO, treasurer). The Registered Office of 2E!SAC is in Sankt Augustin, Germany. The Articles of Association can be found in ANNEX A.

Shortly after submission of this deliverable, 2E!SAC will formulate its agenda which will be decided upon by the membership at its first regular assembly of 2E!SAC members on March 27, 2017.

11.2 Aims and purposes of 2E!SAC

The main goal of founding 2E!SAC was establishing an organisational frame for continuing activities towards implementing EISAC after the end of CIPRNet. 2E!SAC is, as the name suggests, a stepping-stone towards EISAC.

By definition of its articles of association (cf. ANNEX A), 2E!SAC is an association that fosters the creation of EISACs. It provides a formal frame for its members for pursuing respective promotional activities. Once a critical mass of EISACs is implemented, the association could be terminated. The potential benefit for its members is that they could directly benefit from participating in the foundation of an EISAC-xy in a member’s country, and that the association facilitates getting access rights to members’ technologies, including CIPRNet results.

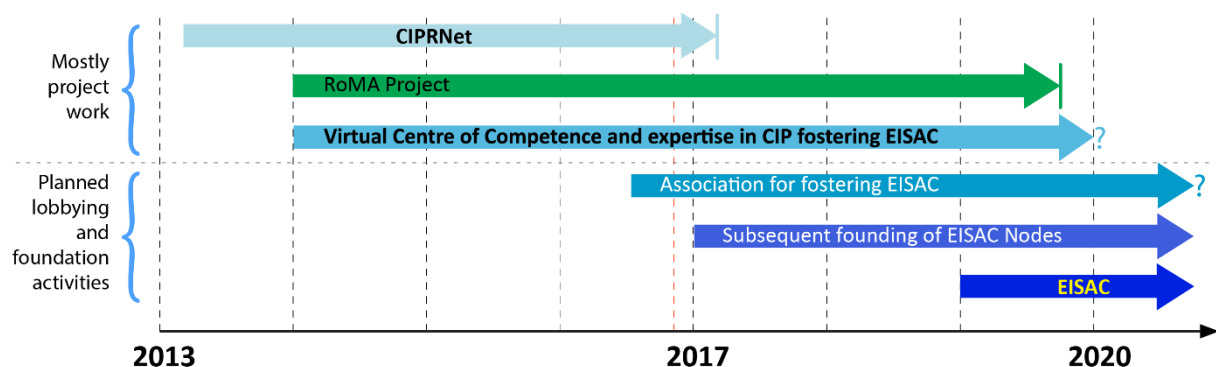


Figure 15: Timeline showing possible paths to EISAC. The VCCC could maintain certain services beyond the duration of CIPRNet. The Italian RoMA project enables the Italian CIPRNet partners to further develop their VCCC services. The association for fostering EISAC (2E!SAC) provides a formal frame for some of the CIPRNet partners for promoting EISAC. Also, new partners could join 2E!SAC.

A more detailed description of the plans for making the transition from CIPRNet to EISAC please find in the companion deliverable D4.7 [CD47].

12 Summary and overall assessment

12.1 The VCCC services

This document has presented descriptions of the final status of the most prominent services that altogether make up the tangible Virtual Centre of Competence and Expertise in CIP (VCCC) that CIPRNet has created. All CIPRNet activities were strongly oriented towards its initial audiences, including the creation of new capabilities, education and training, dissemination, stakeholder contacts, information brokerage, and more. Therefore, all these activities could also be considered being services to these initial audiences, where ‘service’ has a broad meaning. The CIPRNet consortium has chosen the service view on CIPRNet as a framework for describing both the final status of the VCCC (this **D4.9**) and the implementation plan towards EISAC (**D4.7**, [CD4.7]). The service framework as represented in Table 1 facilitates the identification of the relations between the two deliverables, and it facilitates also formulating concrete offerings as part of the business plans.

This deliverable focused on the VCCC’s major services:

- Decision Support System (DSS) CIPcast
- What-If Analysis in CIPRTrainer (web demonstration)
- Ask the Expert
- Knowledge repository (restricted access to the CIPRNet inventory database)
- CIPedia©
- CIPRNet MOOC training platform.

In Table 2, these services are mapped against the service framework. All the aforementioned CIPRNet VCCC services can be accessed via a single entry-point, namely the ‘services’ page on the CIPRNet website. That is, all these services are accessible and demonstrable. For a few of these services some restrictions apply (for reasons explained in the respective sections).

The newest service is the CIPRNet MOOC training platform, providing course material derived from several CIPRNet training events. It has been conceptualised as an e-learning platform for offering massive open online courses (MOOC). The goal here was boosting the impact of CIPRNet’s training activities. CIPRNet’s MOOC platform has been setup professionally, provides quality contents and evaluation functions, and has an appealing look. However, first experiences show that such a platform that offers highly specialised content is not a fast-selling item but requires extra marketing activities (currently underway).

A really fast-selling item is CIPedia©, the online glossary of CIP related terms. It benefits from the fact that after the publication end of May 2014, we had sufficient time for promoting and growing CIPedia©. This service is of general usability for a wide audience, which makes it also more popular. The success of CIPedia© has been reported in several places ([CD1.43], [CD2.22], [CD2.34] and more). Just as for its role model Wikipedia, it is fact that the number of active contributors to CIPedia© compared to the number of consumers is very low.³ Therefore, we consider that a common psychological human property, not a weakness of CIPedia©.

The services built on CIPRNet’s inventory database, Ask the Expert and the Knowledge Repository, also suffer from the fact that people typically rather consume than generate contents. CIPRNet has made dedicated efforts to grow its database. Offerings, presentation, the user-interface and marketing of these services would need to be better designed in order to turn them into a useful and attractive offering for inclusion in a future EISAC business model.

³ Only 0.39% of the users of the English Wikipedia that have a login have contributed to Wikipedia in the last 30 days; see <https://en.wikipedia.org/wiki/Wikipedia:Wikipedians>

Finally, the web demonstration services of CIPRNet's two new technical capabilities, advanced decision support (CIPcast) and 'what if' analysis (CIPRTrainer), are designed mostly for demonstrating the added-value of these new capabilities and attract stakeholders. The underlying full-fledged systems have different prospects. CIPcast, which existed in an early prototypical version already before CIPRNet commenced, is in use in Italy by various stakeholders (CI operators and civil protection). CIPRTrainer, developed from scratch in CIPRNet, has been demonstrated to and used for training of CIPRNet's initial audiences on several occasions (three demonstrations, three training events). The use of CIPRTrainer at UCBM is a subject of discussion.

12.2 Community building around the VCCC services

CIPRNet has been active in community building, with a total of over 140 events, including 54 dissemination events, 49 training events, and 38 stakeholder meetings (for details please cf. [CD2.34]). This resulted in a very high visibility of CIPRNet. Evidence for this are numerous enquiries that CIPRNet partners received, including collaboration enquiries, enquiries regarding website interlinking, invitations for presentations or keynote speeches, invitations to editorial boards or programme committees, enquiries for collocating events with CRITIS, and enquiries for providing expertise to externals. In addition, several of the CIPRNet services described in this document supported and brought communities together. Without aspiration of completeness, we want to focus on two community building aspects here.

Community building by training

Physical events (CIPRNet courses, lectures, and master classes) brought together over 1,500 people (details see [CD2.22]) in four years, whereas the MOOC attracted over 230 users in a relatively short period (less than one month). CIPRNet's physical training activities will end together with the project, but partners that are active in further working towards EISAC will monitor the impact of the MOOC platform and see if and how it sustains.

Community building by dissemination

CIPRNet did of course contribute to its audiences by the usual means, like dissemination of research results in scientific publications, books, and at conferences. Focal activities here were the organisation of conferences (four CRITIS events (three of them had co-located workshops of other EU projects), and several others like TIEMS, NetToNets, ESReDA), which attracted several hundreds of participants.

A real dissemination success was and is CIPedia©. It is typical that projects addressing CIP topics are multi-disciplinary, and in multi-disciplinary projects it is extremely important to understand the terminology from the involved disciplines. All such projects need glossaries of terms and definitions, and that was also the starting point for CIPedia©. It started based on the results of three projects (IRRIIS, DIESIS, and CIPRNet), and has grown significantly since then. The H2020 project RESIN has also adopted CIPedia© and has added definitions related to a specific threat category (climate change).

It turned out that not only the research communities, but also other stakeholders in CIP/CIR needed CIPedia©. CIP policy-making is multi-sectoral and—in the EU—to some extent also cross-border. Again, getting the terminology right is important for this purpose. A strong point of CIPedia© is the inclusion of international definitions and information sources, partly also in languages different from English, and its being up-to-date. The implementation and revision of CIP policies proceeds quickly and in parallel in Member States, and CIPedia© helps keeping track of latest developments.

12.3 Way ahead

CIPRNet core partners have been working towards EISAC since the year 2007, starting with the FP7 project DIESIS. Such an endeavour requires a long breath and is dependent on the availability of funding, until one or more EISAC nodes have been founded. Based on the—negative—experience of a funding gap between 2010 and 2013, the involved core partners developed the following long-term strategy for working towards EISAC.

- First, the available technologies should be further developed into working prototypes of new capabilities in order to produce a better offer to the end-users and stakeholders;
- Second, capacity building activities should strengthen and extend the CIP/CIR community;
- Third, the core partners should team up with other major players in CIP/CIR at EU level;
- Fourth, future dissemination activities should directly address stakeholders and end-users;
- Fifth, any future activity should try bundling partners' know-how, and
- Sixth, provisions should be made for overcoming gaps in funding.

The first four elements have been addressed in CIPRNet as this deliverable showed, and in this concluding section we want to describe briefly how CIPRNet addressed the fifth and sixth element of the strategy.

In order to overcome potential gaps in funding, the CIPRNet partners have planned founding an association for further fostering EISAC. This association should provide a formal frame for promoting EISAC, for maintaining at least a loose cooperation, and also for attracting new supporters. It is easier to join an association than designing, agreeing and signing mutual collaboration agreements and NDAs between many parties.

On November 22, 2016, eight CIPRNet partners and one external organisation mobilised by a member of the International Advisory Board has been founded. 2E!SAC is a non-profit association by German law. The founding assembly of 2E!SAC took place in Sankt Augustin, Germany (which is also the registered office of the association). Founding members are Fraunhofer, ENEA, TNO, CEA, UCBM, UCY, Acris and Tecnalía (as the external member). 2E!SAC will start drafting an agenda on the first regular assembly. Deltares and other partners plan joining the association as ordinary members.

Most of the 2E!SAC members have also developed business plans for national EISAC nodes. These plans are described in the (restricted) deliverable [CD4.7]. That deliverable also includes a business plan for a central node in the virtual network of national EISAC nodes and facilities. The implementation of these plans will be performed as a mixture of opportunistic and pro-active acquisition. 2E!SAC shall support both these modes.

In parallel, several partners can still work on extending the inventory of knowledge and technological results, since they will be working in thematically related projects for a couple of years to come (RESIN, RoMA, more).

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ANNEX A – Charter of 2E!SAC

Satzung

2EISAC Verein zur Verbesserung der Resilienz vitaler Infrastrukturen in Europa

1. Inhaltsverzeichnis

- § 1 - Name, Sitz, Rechtsform und Geschäftsjahr
- § 2 - Sprache
- § 3 - Selbstlosigkeit
- § 4 - Zweck und Aufgaben
- § 5 - Erwerb der Mitgliedschaft
- § 6 - Rechte und Pflichten der Mitglieder
- § 7 - Beendigung der Mitgliedschaft
- § 8 - Mitgliedsbeiträge
- § 9 - Organe des Vereins
- § 10 - Mitgliederversammlung, Aufgaben und Beschlussfassung
- § 11 - Vorstand
- § 12 - Aufgaben und Beschlussfassung des Vorstands
- § 13 - Sekretariat
- § 14 - Rechnungsprüfer
- § 15 - Satzungsänderungen und Auflösung
- § 16 - Gleichstellungsklausel

2. Abkürzungsverzeichnis

CIPRNet	Forschungsnetzwerk für Schutz und Resilienz Kritischer Infrastrukturen (Critical Infrastructure Protection and Resilience Research Network)
EISAC	Europäisches Simulations- und Analysezentrum für Infrastrukturen (European Infrastructures Simulation and Analysis Centre)
F&E	Forschung und Entwicklung
ISAC	Simulations- und Analysezentrum für Infrastrukturen (Infrastructures Simulation and Analysis Centre)
KRITIS	Kritische Infrastrukturen
RKI	Resilienz Kritischer Infrastrukturen
SKI	Schutz Kritischer Infrastrukturen

Articles of Association

2EISAC Association for improving vital infrastructure resilience in Europe

1. Table of contents

- § 1 - Name, registered office, legal form and fiscal year
- § 2 - Language
- § 3 - Non-profit status
- § 4 - Purpose and tasks
- § 5 - Application for membership
- § 6 - Members' rights and duties
- § 7 - Termination of membership
- § 8 - Membership fees
- § 9 - Bodies of the association
- § 10 - General assembly, tasks and resolutions
- § 11 - Executive Board
- § 12 - Tasks and resolutions of the Executive Board
- § 13 - Secretary
- § 14 - Auditor
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- § 16 - Equalisation clause

2. Abbreviations

CIPRNet	Critical Infrastructure Protection and Resilience Research Network
EISAC	European Infrastructures Simulation and Analysis Centre
R&D	Research and Development
ISAC	Infrastructures Simulation and Analysis Centre
CI	Critical Infrastructures
CIR	Critical Infrastructure Resilience
CIP	Critical Infrastructure Protection

3. Präambel

2E!SAC trägt dazu bei europäische Forschungs- und Entwicklungsinstitutionen und -organisationen, Behörden, Betreiber Kritischer Infrastrukturen und andere Interessenvertreter im Bereich F&E zum Schutz und der Resilienz kritischer Infrastrukturen zusammen zu bringen, um auf bestmögliche Rahmenbedingungen für Innovationen in diesem Bereich hinzuwirken. Dazu gehört insbesondere auch die Einrichtung einer gemeinsamen, regelmäßigen Gesprächsbasis mit nationalen, europäischen und internationalen Organisationen und Institutionen. 2E!SAC trägt dazu bei, die herausgehobene Bedeutung der F&E zum Schutz und der Resilienz kritischer Infrastrukturen für unsere Gesellschaft einer breiten Öffentlichkeit zu vermitteln.

3. Preamble

2E!SAC contributes to bringing together European research and development institutions and organisations, public authorities, critical infrastructure operators as well as other stakeholders in the field of critical infrastructure protection and resilience R&D in order to promote the best possible framework conditions for innovation in this area. This includes in particular the establishment of a common, regular basis for discussion with representatives of national, European and international organisations and institutions. 2E!SAC helps to convey the prominent importance of critical infrastructure protection and resilience R&D for our society to a broad public.

§ 1 - Name, Sitz, Rechtsform und Geschäftsjahr

1. Der *Verein* führt den Namen 2E!SAC - Verein zur Verbesserung der Resilienz vitaler Infrastrukturen in Europa im folgenden kurz „2E!SAC“ oder „Verein“ genannt.
2. Der *Verein* soll in das Vereinsregister des Amtsgerichts Siegburg, Deutschland, eingetragen werden; nach der Eintragung erhält der Vereinsname den Zusatz „e.V.“.
3. 2E!SAC hat seinen *Sitz* in Sankt Augustin, Deutschland.
4. Das *Geschäftsjahr* ist das Kalenderjahr.

§ 2 - Sprache

1. Diese *Satzung* und die auf ihrer Basis erlassene *Beitragsordnung* sind in Deutsch und in Englisch abgefasst. Auch die Protokolle der *Mitgliederversammlungen* (§ 10 Nr. 12) und der *Vorstandssitzungen* (§ 12 Nr. 9) sowie die Jahresabrechnungen (§ 14 Nr. 3) müssen in Deutsch und in Englisch abgefasst werden.
2. Es besteht Einigkeit, dass die deutsche Fassung im Fall von Abweichungen die führende Fassung ist.

§ 1 - Name, registered office, legal form and fiscal year

1. The *Association* is named “**2E!SAC Association for improving vital infrastructure resilience in Europe**” hereafter abbreviated “2E!SAC” or “Association”.
2. The *Association* shall be registered at the register of associations at the district court Siegburg, Germany, after registration “e.V.” shall be added to its name.
3. The *Registered Office* of 2E!SAC is in Sankt Augustin, Germany.
4. The *Fiscal Year* is the calendar year.

§ 2 - Language

1. These *Articles of Association* – and derived from these – the *Membership Fee Regulation*, the minutes of the *General Assembly Meetings* (§ 10 No. 12) and the *Board Meetings* (§ 12 No. 9), as well as the *annual accounts* (§ 14 No. 3) are drawn up in German and in English.
2. It is in any case understood that the German version in case of discrepancies shall prevail.

§ 3 - Selbstlosigkeit

1. Der *Verein* ist selbstlos tätig; er verfolgt nicht in erster Linie eigenwirtschaftliche Zwecke.
2. Mittel des *Vereins* dürfen nur für die satzungsmäßigen Zwecke verwendet werden. Die *Mitglieder* erhalten keine Zuwendung aus Mitteln des *Vereins*. Es darf keine Person durch Ausgaben, die dem Zweck des *Vereins* fremd sind oder durch unverhältnismäßig hohe Vergütung begünstigt werden. Der *Verein* verfolgt keine Gewinnerzielungsabsicht.
3. Der *Vorstand* wird ermächtigt, die *Satzung* in Rücksprache mit dem Finanzamt dergestalt zu ändern, dass sie den formalen Ansprüchen für Erlangung der Gemeinnützigkeit genügt. Die Zielsetzung der Arbeit des *Vereins* bleibt davon unberührt.

§ 3 - Non-profit status

1. The *Association* shall operate for non-profit purposes; it shall not primarily pursue its own business objectives.
2. The *Association's* funds may only be used for purposes in accordance with these *Articles of Association*. The *Members* shall not receive any allocation from the *Association's* funds. No person or entity may profit by expenditures different from the objective of the *Association* or by disproportionately high remuneration. The *Association* has no intent to realise a profit.
3. The *Executive Board* shall be authorised to change these *Articles of Association* in co-operation with the German tax authorities in order to fulfil the formal requirements of gaining tax-privileged status. The aims and objectives of the work of the *Association* remain unaffected.

§ 4 - Zweck und Aufgaben

1. Der *Verein* verfolgt ausschließlich und unmittelbar gemeinnützige Zwecke im Sinne des Abschnitts „Steuerbegünstigte Zwecke“ der Abgabenordnung.
2. Die Zwecke des *Vereins* bestehen in der Förderung von Wissenschaft und Forschung auf dem Gebiet des Schutzes kritischer Infrastrukturen und deren Resilienz sowie auf dem Gebiet der Förderung des Katastrophen- und Zivilschutzes.
3. Der Vereinszweck soll insbesondere durch folgende Maßnahmen erreicht werden:
 - a. Schaffung von Voraussetzungen zur Einrichtung einer kollaborativen Plattform für die europäische KRITIS-Gemeinde, die praktische Expertise und Dienste bereitstellt, um die KRITIS-Resilienz zu erhöhen und sich auf alle Gefahren vorzubereiten.
 - b. Förderung der Gründung und der Zusammenarbeit zwischen den nationalen Instanzen der Kooperationsplattform (Simulations- und Analysezentrum für Infrastrukturen (ISAC)),
 - c. Förderung der Manifestation der Zusammenarbeit auf europäischer Ebene durch die Einführung einer europäischen Plattform (EISAC – Europäisches Simulations- und Analysezentrum für Infrastrukturen).
 - d. Initiierung und Unterstützung gemeinsamer F&E-Aktivitäten.
 - e. Austausch und Verbreitung von Kenntnissen.
 - f. Verbreitung von auf den Schutz kritischer Infrastrukturen (KRITIS) und Resilienz bezogenen Kenntnissen und Ressourcen über verschiedene Kanäle (z.B. Websites, Konferenzen, Newsletter).
 - g. Bereitstellung und Weiterentwicklung der CIPRNet-Websites und entsprechender Mailinglisten.
 - h. Informationsauswertung und Informationsaustausch der *Mitglieder* über relevante Entwicklungen.

§ 4 - Purpose and tasks

1. The *Association* shall exclusively and directly pursue non-profit objectives within the meaning of the section on “Preferential tax treatment” in the German Tax Code.
2. The purposes of the *Association* consist of the promotion of science and research in the field of critical infrastructure protection and resilience as well as the promotion of disaster and civil protection.
3. The objectives of the *Association* shall be reached by the following measures:
 - a. Creation of conditions for the establishment of a collaborative platform that provides practical expertise and services for the European CI community to enhance CI resilience and to prepare for all hazards.
 - b. Fostering the establishment and collaboration of national instances of a platform for collaboration in CI (Infrastructure Simulation and Analysis Centre (ISAC)).
 - c. Fostering the manifestation of the collaboration at the European level by introducing a European platform (EISAC – European infrastructure simulation and analysis centre).
 - d. Initiation and support of joint R&D activities.
 - e. Exchange and dissemination of knowledge.
 - f. Dissemination of Critical Infrastructure (CI) Protection and Resilience related knowledge and resources via various channels (e.g. websites, conferences, newsletters).
 - g. Provision and further development of the CIPRNet website and corresponding mailing lists.
 - h. Information analysis and information exchange between the *Members* about relevant developments.

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">i. Beratung politischer Fachgremien zu SKI / RKI. <ul style="list-style-type: none">4. Darüber hinaus kann der <i>Verein</i> alle Arten von Aktivitäten ausüben, die zur Erreichung seiner Ziele geeignet sind.5. Der <i>Verein</i> verfolgt keine auf einen wirtschaftlichen Geschäftsbetrieb gerichteten und keine parteipolitischen Zwecke. | <ul style="list-style-type: none">i. Consulting CIP / CIR policy expert bodies. <ul style="list-style-type: none">4. In addition, the <i>Association</i> may perform all kinds of activities that are suited for reaching its objectives.5. The <i>Association</i> pursues no purposes directed towards economic operations and no party-political purposes. |
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§ 5 - Erwerb der Mitgliedschaft

1. Die *ordentliche Mitgliedschaft* im *Verein* kann von juristischen oder natürlichen Personen („Aufnahmeinteressenten“) erworben werden, die im Bereich der SKI / RKI aktiv sind oder die an innovativen Lösungen in diesem Bereich Interesse haben.

Jede juristische Person bevollmächtigt zur Wahrnehmung ihrer Mitgliedschaftsrechte und –pflichten schriftlich eine natürliche Person, insbesondere einen Mitarbeiter, wobei eine natürliche Person jeweils nur ein *Mitglied* vertreten kann.

2. Aufnahmeinteressenten richten einen schriftlichen Aufnahmeantrag an den *Vorstandsvorsitzenden*. Über die Aufnahme entscheidet der *Vorstand*. Der *Verein* dokumentiert alle akzeptierten und abgelehnten Mitgliedschaftsanträge.
3. Auf Vorschlag des *Vorstands* kann die *Mitgliederversammlung*, Menschen, die große Beiträge geleistet oder Leistungen für den *Verein* erbracht haben, zu *Ehrenmitgliedern* ernennen. *Ehrenmitglieder* können an Sitzungen der *Mitgliederversammlung* in beratender Funktion teilnehmen. *Ehrenmitglieder* sind von der Zahlung von *Mitgliedsbeiträgen* befreit und haben kein Stimmrecht.
4. Alle *Gründungsmitglieder* sind *ordentliche Mitglieder*.

§ 5 - Application for Membership

1. *Regular Membership* in the *Association* can be attained by legal entities or natural persons (“Applicants”) that are active in the field of CIP / CIR or that have an interest in innovative solutions in this area.

Each legal entity authorises in written form a natural person, especially an employee, for representing its *Membership* rights and duties, whereby one natural person may represent only one *Member*.

2. Applicants shall submit a written *Membership* application to the chairman of the *Executive Board*. The *Executive Board* decides on the admission. The *Association* holds a register of both all accepted and rejected *Membership* applications.
3. Upon request of the *Executive Board*, the *General Assembly* may appoint natural persons who have performed great contributions or services for the *Association* as *Honorary Members*. *Honorary Members* may participate in *General Assembly* meetings in a consulting capacity. *Honorary Members* are exempted from paying annual *Membership Fees* and have no voting rights.
4. All *Founding Members* are *Regular Members*.

§ 6 - Rechte und Pflichten der Mitglieder

1. Jedes *ordentliche Mitglied* ist berechtigt, die Einrichtungen des *Vereins* zu nutzen und Leistungen des *Vereins* in Anspruch zu nehmen.
2. Diese Rechte können die *Mitglieder* des *Vereins* ausschließlich über ihre gesetzlichen oder die von ihnen bevollmächtigten Vertreter (vgl. § 5 Abs. 1 Satz 2) wahrnehmen. Die Rechte von *Ehrenmitgliedern* werden vom *Vorstand* festgesetzt und können dem jeweiligen Einzelfall angepasst werden.
3. Die *Mitglieder* sind an die satzungsgemäß gefassten Beschlüsse des *Vereins* gebunden. Sie sind ferner verpflichtet, die vorgesehenen *Mitgliedsbeiträge* zu zahlen. Als vertraulich gekennzeichnete Informationen dürfen von *Mitgliedern* nicht an Dritte weitergegeben werden.
4. Die *Mitgliedschaft* ist nicht übertragbar oder abtretbar außer wenn ein *Mitglied* (juristische Person) von einer anderen juristischen Person erworben wird. In diesem Fall kann die *Mitgliedschaft* auf schriftlichen Antrag fortgesetzt werden.
5. Bei den ersten beiden Vorstandswahlen können nur Vertreter der *Gründungsmitglieder* gewählt werden.

§ 6 - Members' rights and duties

1. Each *Regular Member* shall be entitled to use the facilities of the *Association* and utilise services of the *Association*.
2. *Members* of the *Association* may exercise these rights exclusively by their Executive Board Members or by named employees of their office (cf. § 5 subparagraph 1 sentence 2). The rights of *Honorary Members* shall be determined by the *Executive Board* and can be adapted to each individual case.
3. The *Members* are bound by statutory decisions taken by the *Association*. They are also obliged to pay the due *Membership* fees. *Members* must not disclose information identified as confidential to third parties.
4. The *Membership* of the *Association* is not transferable or assignable, except when another legal entity acquires a *Member* (legal entity). In this case the *Membership* may continue when applied for in writing.
5. At the first two elections to the *Executive Board* only representatives of *Founding Members* may be elected.

§ 7 - Beendigung der Mitgliedschaft

1. Eine *Mitgliedschaft* endet:
 - a. wenn das *Mitglied* die *Mitgliedschaft* schriftlich, gerichtet an den *Vorsitzenden*, kündigt
 - b. bei natürlichen Personen, wenn ein *Mitglied* verstirbt
 - c. bei juristischen Personen, wenn die juristische Person aufhört zu existieren
 - d. durch Ausschluss des *Mitglieds*.
2. Die *Mitgliedschaft* kann unter Einhaltung einer Frist von sechs (6) Monaten zum Ende des *Geschäftsjahres* gekündigt werden. Allerdings ist die *Mitgliedschaft* eines *Mitglieds* in folgenden Fällen sofort zu beenden:
 - a. Die Fortsetzung der *Mitgliedschaft* nicht vom *Vorstand* verlangt werden kann.
 - b. Falls die *Satzung* geändert wird und das *Mitglied* innerhalb von zwei Monaten nach der Änderung erklärt, dass es nicht mit den Änderungen einverstanden ist.
 - c. Bei bestätigtem Ausschluss des *Mitglieds*.
3. Der *Vorstand* kann *Mitglieder* aus wichtigen Gründen ausschließen, wenn das Verhalten des *Mitglieds* in grober Weise gegen die *Satzung* oder die Interessen des *Vereins* verstößt. Bevor der Ausschluss beschlossen wird, ist dem *Mitglied* unter Setzung einer angemessenen Frist Gelegenheit zur Äußerung zu geben.

Gegen den Beschluss des *Vorstandes* auf Ausschluss des *Mitglieds* kann das *Mitglied* die Entscheidung der nächsten ordentlichen *Mitgliederversammlung* als Rechtsbehelf anrufen. Dieser Rechtsbehelf ist binnen einer Ausschlussfrist von einem Monat nach Zugang des Ausschlussbeschlusses vom *Mitglied* beim *Vorstand* einzulegen. Lässt das betroffene *Mitglied* die Frist für die Einlegung des Rechtsbehelfs ungenutzt verstreichen, so endet seine *Mitgliedschaft* im Verein mit dem Ablauf dieser Frist.

4. Die Beendigung einer *Mitgliedschaft* befreit das *Mitglied* nicht von Verpflichtungen gegenüber dem *Verein* bevor die Beendigung wirksam wird, Ermessensentscheidungen des *Vorstands* ausgenommen.

§ 7 - Termination of Membership

1. A *Membership* ends:
 - a. When the *Member* withdraws from its *Membership* by sending a notification to the Chairman
 - b. For individual persons, when a *Member* deceases
 - c. For legal entities, when the legal entity is abolished
 - d. By exclusion of the *Member*.
2. The *Membership* may be terminated subject to a period of six (6) months to the end of the *fiscal year*. However, the *Membership* of any *Member* should be immediately discontinued in the following cases:
 - a. The continuation of the *Membership* cannot be demanded by the *Executive Board*.
 - b. The *Articles of Association* are changed and the *Member* declares within two months after the change that it disagrees with the change(s).
 - c. Upon confirmed exclusion of the *Member*.
3. The *Executive Board* may exclude *Members* for good cause if the conduct of the *Member* is in gross breach of the *Articles of Association* or the interests of the *Association*. Before a resolution is passed on exclusion, the *Member* shall be given the opportunity of stating his position on the matter within a reasonable period set for this purpose.

The *Member* may apply to the next ordinary *General Assembly* to appeal against the decision of the *Executive Board* for the *Member's* exclusion. The *Member* shall file this appeal with the *Executive Board* within a period of one month after receipt of the decision on the *Member's* exclusion. If the *Member* concerned allows the period for filing an appeal to pass by, his *Membership* in the *Association* shall end on the expiry of this period.

4. The ending of a *Membership* does not relieve the *Member* from any obligation owed to the *Association* before the termination takes effect, discretionary decisions by the *Executive Board* exempted.

§ 8 - Mitgliedsbeiträge

1. Die *Mitgliedsbeiträge* werden von der *Mitgliederversammlung* in einer *Beitragsordnung* festgelegt.
2. *Ordentliche Mitglieder* zahlen die in der *Beitragsordnung* festgehaltenen *Mitgliedsbeiträge*.
3. *Ehrenmitglieder* sind beitragsfrei.

§ 9 - Organe des Vereins

Organe des Vereins sind die *Mitgliederversammlung* und der *Vorstand*.

§ 8 - Membership fees

1. The *Membership Fees* are fixed in the *Membership Fee Regulation* by the *General Assembly*.
2. *Regular Members* shall pay the *Membership Fees* set out in the *Membership Fee Regulations*.
3. *Honorary Members* are non-contributory.

§ 9 – Bodies of the Association

Bodies of the Association are the *General Assembly* and the *Executive Board*.

§ 10 - Mitgliederversammlung, Aufgaben und Beschlussfassung

1. Die *Mitgliederversammlung* besteht aus allen *Mitgliedern* des *Vereins*.
2. Der Vorstandsvorsitzende lädt alle Mitglieder schriftlich zur ordentlichen Mitgliederversammlung ein. Die Einladung muss mindestens vier Wochen vor dem Datum der Mitgliederversammlung – unter Beifügung der Tagesordnung – versendet werden. Die jährliche Mitgliederversammlung soll im ersten Quartal des Geschäftsjahres stattfinden. Eine außerordentliche *Mitgliederversammlung* ist vom *Vorstandsvorsitzenden* einzuberufen, wenn dies die Interessen des *Vereins* erfordern oder wenn mindestens 1/3 der *Mitglieder* dies unter Angabe des Zweckes und der Gründe beim Vorstand schriftlich beantragt. Die Mitglieder sind unter Bekanntgabe der Tagesordnung mindestens eine Woche vor dem Tage der außerordentlichen Mitgliederversammlung in Textform einzuladen.
3. Die *Mitgliederversammlung* ist berechtigt, über alle Vereinsangelegenheiten zu entscheiden.
4. Jedes *ordentliche Mitglied* hat eine Stimme in der *Mitgliederversammlung*.
5. Die *Mitgliederversammlung* ist beschlussfähig, wenn mindestens die Hälfte der *ordentlichen Mitglieder* anwesend ist.
6. Die Beschlüsse der *Mitgliederversammlung* werden mit einfacher Mehrheit getroffen, sofern diese *Satzung* nicht andere Mehrheiten erforderlich macht.
7. Eine Übertragung der Stimmrechte auf ein anderes *Mitglied* ist unzulässig.
8. Im Fall einer Streitigkeit über die Tagungsordnungspunkte der *Mitgliederversammlung* wird nach der *Geschäftsordnung* vorgegangen.
9. Zu den Aufgaben der *Mitgliederversammlung* gehören:
 - Ernennung von *Ehrenmitgliedern*,
 - die allgemeine Richtung der Aktivitäten des *Vereins* zu bestimmen,
 - *Vorstandsmitglieder* zu wählen,
 - *Vorstandsmitglieder* abzuwählen,
 - den *Vorstandsvorsitzenden* zu bestimmen

§ 10 - General assembly, tasks and resolutions

1. The *General Assembly* consists of all *Members* of the *Association*.
2. The *Chairman* convenes all *Members* to the ordinary *General Assembly* meeting by sending a written notification. The notification must be sent at least four weeks before the *General Assembly* meeting date and shall include the agenda. The annual *General Assembly* meeting shall be convened in the first quarter of a fiscal year. An extraordinary *General Assembly* shall be convened by the Chairman if this is required by the interests of the *Association* or if one third of the *Members* apply for in writing, stating the purpose and reasons. *Members* shall be invited to the extraordinary *General Assembly Meeting* at least one week in advance in text form, stating the agenda.
3. The *General Assembly* is entitled to handle decisions on all matters of the *Association*.
4. Each *Regular Member* is entitled to one vote in the *General Assembly*.
5. The *General Assembly* quorum consists of half of the *Regular Members* present.
6. The decisions of the *General Assembly* shall be taken by simple majority vote, unless the decision requires other majorities according to these *Articles of Association*.
7. A transfer of voting rights to another *Member* of the *General Assembly* is not permitted.
8. When a dispute arises about the agenda items of the *General Assembly* meeting, the *Rules of Order* shall be followed.
9. The tasks of the *General Assembly* include:
 - To appoint *Honorary Members*,
 - To determine the general direction of the activities of the *Association*,
 - To elect *Board Members*,
 - To exclude *Board Members*,
 - To appoint the *Chairman of the Executive Board*,

- über die Entlastung des *Vorstands* zu entscheiden,
 - über *Satzungsänderungen* und den Erlass von *Ordnungen* auf der Basis dieser Satzung zu entscheiden,
 - über die *Beitragsordnung* zu entscheiden,
 - über die Behandlung von Vorschlägen zu entscheiden,
 - über den Rechtsbehelf eines auszuschließenden *Mitglieds* zu entscheiden.
 - über die Auflösung des *Vereins* die Verwendung seines Vermögens zu entscheiden
10. Zur Tagesordnung der jährlichen *Mitgliederversammlung* gehören insbesondere:
- Genehmigung des Haushaltsplans für das kommende Geschäftsjahr,
 - Bericht des *Vorstands* über das abgelaufene *Geschäftsjahr*,
 - Bericht des *Schatzmeisters* über die Rechnungslage,
 - Bericht des *Rechnungsprüfers*,
 - Entlastung des *Vorstands*,
 - Wahl des *Vorstands*,
 - Wahl des *Sekretärs* und des *Rechnungsprüfers*,
 - Vorlage und Beschlussfassung über den neuen Arbeitsplan sowie Verteilung von Aufträgen,
 - Bestimmung der Richtlinien für die Arbeit des *Vorstands*,
 - Beschlussfassung über *Satzungsänderungen*,
 - Festsetzung von *Mitgliedsbeiträgen*,
 - Bestätigung des Protokolls der vorangegangenen Sitzung.
11. Die *Mitgliederversammlung* kann im Einzelfall online schriftlich auf dem *Mitglieder-Portal* des Vereins in einer geschlossenen Gruppe abgehalten werden, zu der ausschließlich eingeladene *Vereinsmitglieder* Zugang bekommen. Dort erfolgt die Kommunikation über einen schriftlichen Dialog ("Thread"), an dem sich alle Vereinsmitglieder beteiligen können. Das *Mitglieder-Portal* des Vereins ist nur registrierten und zuvor verifizierten *Mitgliedern* zugänglich. Für Abstimmungen steht im Portal eine eigene Funktionalität zur Verfügung, die auch die Dokumentation der Abstimmungsergebnisse gewährleistet.
12. Der *Sekretär* führt das Protokoll der *Mitgliederversammlung*. Er sendet das Protokoll an die Teilnehmer der *Mitgliederversammlung* zur finalen Freigabe.
- To decide on the approval of the actions of the *Executive Board*,
 - To decide on amendments of the *Articles of Association* and on regulations on the basis of these *Articles of Association*,
 - To decide on *Membership Fee Regulations*,
 - To decide on how to deal with proposals
 - To decide on an appeal of a *Member* to be excluded.
 - To decide on the dissolution of the *Association* and the use of its assets
10. The agenda of the annual *General Assembly* meeting includes in particular:
- Approval of the budget for the coming *Fiscal Year*,
 - Report of the *Executive Board* over the past *Fiscal Year*,
 - Report of the *Treasurer* on the financial situation,
 - Report of the *Auditor*,
 - Approval of the actions of the *Executive Board*,
 - Election of *Board Members*,
 - Election of the *Secretary* and the *Auditor*,
 - Proposal of and resolution on the new work plan and distribution of orders,
 - Determination of guidelines for the work of the *Executive Board*,
 - Resolution on *amendments* to the *Articles of Association*,
 - Assessment of *Membership Fees*,
 - Confirmation of the minutes of the previous meeting,
11. In particular cases, the *General Assembly* can also be conducted online in written form using a closed group within the *Members' portal* of the *Association*, where access is granted exclusively to invited *Members*. There, the communication takes place in a written dialogue ("thread"), in which all *Members* can participate. The *Members' portal* of the *Association* is only accessible to registered and previously authenticated *Members*. The portal provides an own functionality for voting, which also ensures the documentation of the voting results.
12. The Secretary takes the minutes of the General Assembly meeting. The minutes shall be sent to the General Assembly participants for final approval.

§ 11 - Vorstand

1. Ein *Ordentliches Mitglied* darf nicht mehr als ein (1) *Vorstandsmitglied* stellen. Der *Vorstand* setzt sich wie folgt zusammen: *Vorsitzender*, *Stellvertretender Vorsitzender* und *Schatzmeister* und bis zu zwei weiteren *Vorstandsmitgliedern*. Der *Schatzmeister* kann als zweiter *Stellvertretender Vorsitzender* fungieren. Der *Vorstand* und der *Vorsitzende* werden von der *Mitgliederversammlung* gewählt. In einem zweiten Schritt werden der *Stellvertretende Vorsitzende* und der *Schatzmeister* innerhalb des *Vorstands* gewählt.
2. Die Amtszeit der *Vorstandsmitglieder* beträgt zwei Jahre ab ihrer Wahl. Sie bleiben bis zur Wahl eines Nachfolgers im Amt, es sei denn, sie wurden vorzeitig von der *Mitgliederversammlung* abgewählt.
3. Ein *Vorstandsmitglied* kann von seinem Amt zurücktreten. Falls danach die Anzahl der verbleibenden *Vorstandsmitglieder* weniger als drei (3) beträgt, wird eine Wahl notwendig. Die Wahlen für diesen vakanten *Vorstandssitz* sollen unverzüglich durchgeführt werden, jedoch nicht später als drei Monate nach dem Rücktritt des *Vorstandsmitglieds*. Für die Zeit bis zur Neuwahl kooptieren die verbleibenden *Vorstandsmitglieder* eine Person für das vakante *Vorstandsamt*. Die Amtsdauer des kooptierten *Vorstandsmitglieds* dauert bis zur nächsten regulären Wahl der *Vorstandsmitglieder*. Falls der *Vorstandsvorsitzende* zurücktritt, nimmt der *Stellvertretende Vorsitzende* vertretungsweise das Amt des *Vorsitzenden* bis zur Neuwahl des *Vorsitzenden* wahr.
4. Der *Vorstandsvorsitzende* vertritt den Verein gerichtlich und außergerichtlich gemeinsam mit einem weiteren Mitglied des *Vorstands*.
5. Die Haftung der *Vorstandsmitglieder* ist auf Vorsatz und grobe Fahrlässigkeit beschränkt.
6. Ein *Vorstandsmitglied* kann für höchstens zwei aufeinander folgende Zwei-Jahresperioden gewählt werden.

§ 11 - Executive Board

1. A *Regular Member* may not provide more than one (1) *Board Member*. The *Executive Board* is composed of the following officers: *Chairman*, *Vice-Chair*, and *Treasurer* and up to two more *Board Members*. The *Treasurer* can act as second *Vice-Chair*. The *General Assembly* elects the *Executive Board* and the *Chairman*. In a second step, the *Executive Board* elects the *Vice-Chair* and the *Treasurer*.
2. The mandate *Board members* shall be two years from their election. They remain in office until the election of their successor, unless they have been excluded by the *General Assembly* before.
3. A *Board Member* may resign from its duty. If the number of remaining *Board Members* is less than three (3), an election is necessary. The elections for this vacant *Executive Board* seat are to be carried out immediately, but no later than three months after the *Board Member's* resignation. For the time until the election of a new *Board Member*, the remaining *Board Members* co-opt a person for the vacant *Executive Board* position. The co-opted *Board Member is chosen* until the next regular election of *Board Members*. If the *Chairman* resigns, the *Vice-Chair* will become acting *Chairman* until the elections.
4. The *Chairman* of the *Executive Board* represents the *Association* judicially and extra judicially together with another *member* of the *Executive Board*.
5. The liability of the *Board Members* is limited to wilful intent and gross negligence.
6. A *Board Member* may serve for a maximum of two consecutive two-year terms.

§ 12 - Aufgaben und Beschlussfassung des Vorstands

1. Dem *Vorstand* obliegt die Geschäftsleitung nach Maßgabe dieser *Satzung*, der Beschlüsse der *Mitgliederversammlung* und seiner Geschäftsordnung. Der *Vorstand* ist berechtigt sich eine Geschäftsordnung (Geschäftsordnung des Vorstands) zu geben.
2. Der *Vorsitzende* leitet die *Mitgliederversammlungen* und die *Vorstandssitzungen*. Der *Stellvertretende Vorsitzende* übernimmt bei Abwesenheit des *Vorsitzenden* dessen Funktion.
3. Jedes *Vorstandsmitglied* hat eine Stimme.
4. Der *Vorstand* fasst seine Beschlüsse mit einfacher Stimmenmehrheit, soweit diese *Satzung* nicht etwas anderes vorsieht und wird sich in angemessener Weise bemühen, seine Beschlüsse einstimmig zu fassen.
5. Die folgenden Sachverhalte können nur einstimmig durch den *Vorstand* verabschiedet werden:
 - a) Aufnahme neuer *Mitglieder*.
 - b) Externe Veröffentlichungen und Mitteilungen im Zusammenhang mit EISAC und mit dem *Verein*.
 - c) Entscheidungen bezüglich der Zusendung einer schriftlichen Mitteilung einer wesentlichen Pflicht- oder Verfahrensverletzung an ein *Mitglied* und bezüglich des Ausschlusses eines *Mitglieds* aus dem *Verein* nach § 7 Absatz 3.
 - d) Entscheidungen bezüglich der Einleitung eines Rechtsstreits gegen Dritte.
6. Die *Beschlussfähigkeit* des *Vorstands* besteht bei Anwesenheit (auch per Telefon- oder Videokonferenz) aller *Vorstandsmitglieder*.

In Abweichung vom Vorstehenden gilt jedoch: nimmt ein *Vorstandsmitglied* dreimal in Folge nicht an den *Vorstandssitzungen* teil, wird dieses *Vorstandsmitglied* bei der Feststellung der *Beschlussfähigkeit* bei der dritten *Vorstandssitzung* nicht gezählt. Dasselbe gilt für alle folgenden *Vorstandssitzungen*, sofern das betreffende *Vorstandsmitglied* auch weiterhin mindestens dreimal in Folge nicht an den *Vorstandssitzungen* teilnimmt.

§ 12 - Tasks and resolutions of the Executive Board

1. The *Executive Board* is responsible for the management of the *Association* in accordance with these *Articles of Association*, the decisions of the *General Assembly* and its rules of order. The *Executive Board* is entitled to issue its own rules of order (board's rules of order).
2. The *Chairman* presides over the *General Assembly meetings* and the *Executive Board meetings*. In the absence of the *Chairman* the *Vice-Chair* takes over his function.
3. Each *Board Member* shall have one vote.
4. The *Executive Board* shall take its decisions by a simple majority vote, unless these *Articles of Association* state otherwise and will take appropriate steps to take its decisions unanimously.
5. The following issues can only be adopted unanimously by the *Executive Board*:
 - a) Accession of new *Members*.
 - b) External publications and communications relating to EISAC and the *Association*.
 - c) Decisions regarding the delivery of a written notice of a substantial breach of duty or procedure to a *Member* and with respect to the exclusion of a *Member* from the *Association* in accordance with § 7 subparagraph 3.
 - d) Decisions regarding the initiation of lawsuits against third parties.
6. The quorum of the *Executive Board* consists in the presence (also by telephone or video conference) of all *Board Members*.

Notwithstanding the foregoing, however, the following applies: If a *Board Member* absents itself from three consecutive *Executive Board meetings*, this *Board Member* is not counted in determining the quorum at the third *Executive Board meeting*. The same applies for all subsequent *Executive Board meetings* as long as the *Board Member* in question continues to be absent from the *Executive Board meetings* at least three times in a row.

7. Vorstandssitzungen werden mindestens vierteljährlich abgehalten. Termin und Ort jeder Sitzung sind vom *Vorsitzenden* zu bestimmen. Der *Vorsitzende* sorgt dafür, dass die Tagesordnung der jeweiligen Sitzung den Vorstandsmitgliedern mindestens eine Woche im Voraus übersendet wird, damit sie sich angemessen vorbereiten und an der Sitzung teilnehmen können. Vorstandssitzungen können durch persönliche Anwesenheit oder per Audio- und/oder Video-Konferenz abgehalten werden. Es wird erwartet, dass jedes *Vorstandsmitglied* an den Vorstandssitzungen teilnimmt. Eine Übertragung der Stimmrechte auf ein anderes *Vorstandsmitglied* ist unzulässig.
8. Eine außerordentliche Vorstandssitzung wird abgehalten, wenn ein *Vorstandsmitglied* dies schriftlich gegenüber den übrigen *Vorstandsmitgliedern* verlangt.
9. Der *Vorsitzende* führt bei allen Vorstandssitzungen Protokoll. Die *Vorstandsmitglieder* erhalten ein Exemplar des Protokolls innerhalb einer Woche nach der Sitzung. Die *Mitglieder* können Einsicht in die Vorstandsprotokolle verlangen.
10. Die Vorstandstätigkeit wird vom *Verein* nicht vergütet. Unbeschadet des vorstehenden Satzes kann, wenn es als angemessen beurteilt wird, eine Aufwandsentschädigung für bestimmte Dienste zur Förderung der Interessen des *Vereins* und für die Buchführung geleistet werden.
11. Der *Schatzmeister* ist insbesondere verpflichtet, die Buchhaltung zu übernehmen und die *Jahresabrechnung* sowie den Haushaltsplan zu erstellen und der *Mitgliederversammlung* zum Beschluss vorzulegen. Der *Schatzmeister* unterbreitet der *Mitgliederversammlung* auch einen Vorschlag für die Höhe der *Jahresbeiträge*.
7. *Executive Board* meetings are held at least quarterly. Date and place of each meeting shall be determined by the *Chairman*. The *Chairman* shall ensure that the agenda for each meeting is sent to the *Board Members* at least one week in advance so that they can prepare adequately and attend the meeting. *Executive Board* meetings may be held by personal attendance or via audio and / or videoconference. Each *Board Member* is expected to participate in *Executive Board* meetings. A transfer of voting rights to another member of the *Executive Board* is not permitted.
8. An *extraordinary Executive Board* meeting is convened when a *Board Member* requests so in writing to the other *Board Members*.
9. The *Chairman* takes the minutes for all *Executive Board* meetings. The *Board Members* will receive a copy of the minutes within one week after the meeting. *Members* may require access to the *Executive Board* meeting minutes.
10. Duty as a *Board Member* is unpaid by the *Association*. However, if it is judged reasonable, compensation can be given for specific services for promoting the interests of the *Association* and for accounting.
11. The *Treasurer* is especially obliged to take over the bookkeeping and to create the *Annual Accounts* as well as the budget proposal and to submit these to the *General Assembly* for decision. In Addition, the *Treasurer* shall submit to the *General Assembly* a proposal for the amounts of annual *Membership Fees*.

§ 13 - Sekretariat

1. Die *Mitgliederversammlung* wählt eine Person, die für die Dauer von zwei Jahren als *Sekretär des Vereins* fungiert. Der *Sekretär* regelt die allgemeinen verwaltungstechnischen Aspekte der Aktivitäten des *Vereins* und ist für die Einladungen zu den *Mitgliederversammlungen*, das Führen der *Mitgliederliste*, die Protokollierung der *Mitgliederversammlung*, die Veranstaltungsorganisation und die sonstige Öffentlichkeitsarbeit des *Vereins* sowie für alle anderen ihm vom *Vorstand* zugewiesenen Aufgaben zuständig.
2. Die mit der Arbeit des *Sekretariats* verbundenen Gebühren, Kosten und Auslagen werden aus dem Budget des *Vereins* entnommen.
3. Die Grundsätze der Arbeit des *Sekretariats* werden in der *Geschäftsordnung* des *Vereins* geregelt.

§ 13 - Secretary

1. The *General Assembly* elects a person that acts for the period of two years as the *Secretary of the Association*. The *Secretary* controls the general administrative aspects of the activities of the *Association* and is responsible for the invitations to *General Assembly* meetings, keeping the *Membership* list, the minutes of the *General Assembly* meetings, the organisation of events and other public relations work of the *Association* as well as all other tasks assigned to it by the *Executive Board*.
2. The costs, fees and expenses associated with the work of the *Secretary* are withdrawn from the budget of the *Association*.
3. The principles of work of the *Secretary* are ruled in the *Bylaws* of the *Association*.

§ 14 - Rechnungsprüfer

1. Die *Mitgliederversammlung* wählt eine Person aus dem Kreis der *Ordentlichen Mitglieder*, die für die Dauer eines Jahres als *Rechnungsprüfer* des *Vereins* fungiert. Der *Rechnungsprüfer* ist von den *Vorstandmitgliedern* und ihren Organisationen unabhängig.
2. Der *Rechnungsprüfer* hat das Recht und die Pflicht, in Abstimmung mit dem *Schatzmeister* jederzeit, mindestens jedoch einmal im Kalenderjahr, rechtzeitig vor der *Mitgliederversammlung* die Kasse des *Vereins* zu prüfen.
3. Der *Rechnungsprüfer* hat das Ergebnis der Kassenprüfung schriftlich festzuhalten und dem *Vorstand* und der *Mitgliederversammlung* wahrheitsgemäß zu berichten.

§ 14 - Auditor

1. The *General Assembly* elects one person from the *Regular Membership* who acts for the period of one year as *Auditor* of the *Association*. The auditor shall be independent from the *Board Members* and their organisations.
2. The *Auditor* has the right and the duty, in consultation with the *Treasurer* at any time, but at least once per calendar year, to audit the cash of the *Association* in time before the *General Assembly* meeting.
3. The *Auditor* must record the results of the cash audit in writing and report to the *Executive Board* and the *General Assembly* truthfully.

§ 15 - Satzungsänderungen und Auflösung

1. Anträge auf *Satzungsänderungen* oder die *Auflösung* des *Vereins* können vom Vorstand oder mindestens von ein Viertel der *Mitglieder* schriftlich unter Angabe des Zwecks und der Gründe beim *Vorstandsvorsitzenden* eingebracht werden.
2. Bei *Auflösung* oder Aufhebung des *Vereins* oder bei Wegfall steuerbegünstigter Zwecke fällt das nach Ablösung aller Verbindlichkeiten vorhandene Vermögen des Vereins an die noch zu gründende Körperschaft „EISAC“, vgl. § 4 Nr. 3 lit. c dieser *Satzung*, sofern diese Körperschaft im Zeitpunkt der Vermögensübertragung als gemeinnützig anerkannt worden ist. Sollte diese Körperschaft im Zeitpunkt der Auflösung des Vereins nicht wirksam gegründet worden sein oder die Anerkennung der Gemeinnützigkeit nicht vorliegen, fällt das Vermögen an das „Deutsche Komitee für Katastrophenvorsorge e.V. (DKKV)“, das es unmittelbar und ausschließlich für gemeinnützige Zwecke zur Verbesserung der Berücksichtigung Kritischer Infrastrukturen bei der Katastrophenvorsorge zu verwenden hat.
3. Änderungen der *Satzung* oder die Auflösung des *Vereins* muss von einer Zweidrittelmehrheit der *Mitglieder* beschlossen werden. Sollten während einer diesbezüglichen ersten *Mitgliederversammlung* weniger als zwei Drittel der *Mitglieder* anwesend sein, muss eine neue *Mitgliederversammlung* einberufen werden, in der die Stimmen einer einfachen Mehrheit der Anwesenden ausreichend ist.

§ 15 - Amendments of the Articles of Association and liquidation

1. Requests for *Amendments* to the *Articles of Association* or the dissolution of the *Association* can be introduced in writing by the *Executive Board* or at least one quarter of the *Members*, stating the purpose and reasons, to the *Chairman* of the *Executive Board*.
2. In the event that the *Association* is dissolved or terminated or the tax-privileged purposes no longer apply, the existing assets of the *Association* after redemption of all liabilities shall fall to the still to be established corporation “EISAC”, cf. § 4 No. 3 lit. c of these *Articles of Association* provided that this corporation has been approved as a non-profit-making corporation at the time of the asset transfer.
In Case this corporation has not become operative or its non-profit-making purpose has not been approved at the time of the dissolution, the assets of the *Association* shall fall to “German Committee for Disaster Reduction e.V. (DKKV)” which must use the assets directly and exclusively for non-profit purposes to improve the consideration of Critical Infrastructures in disaster protection.
3. Amendments to the *Articles of Association* or liquidation of the *Association* must be decided by a two-thirds majority of *Members* present and represented. If during a first *General Assembly* meeting concerning this matter less than two-thirds of the *Members* are present and represented, a new *General Assembly* meeting must be convened in which the votes of a simple majority of those present is sufficient.

§ 16 - Gleichstellungsklausel

In dieser *Satzung* wird die männliche Form der Anrede auch stellvertretend für die weibliche und die neutrale Form verwendet.

§ 16 - Equalisation clause

In these *Articles of Association*, the male appellation form represents also the female and neutral forms.

5. ANNEX

Beitragsordnung (Beispiel)

1. Sofern nichts anderes in dieser Satzung vorgeschrieben oder vom Vorstand festgelegt wird, trägt jedes Mitglied seine eigenen Kosten für die Erfüllung seiner Pflichten und Aufgaben als Mitglied im Sinne dieser Satzung.
2. Für die Mitgliedschaft von Hochschulen bzw. einzelner Lehrstühle und KMUs wird ein Jahresmitgliedsbeitrag von 100 Euro erhoben.
3. Für die Mitgliedschaft von wissenschaftlichen Einrichtungen/wissenschaftlichen Vereinen wird ein Jahresmitgliedsbeitrag von 500 Euro erhoben.
4. Für die Mitgliedschaft von natürlichen Personen beträgt der Jahresmitgliedsbeitrag 100 Euro.
5. Ehrenmitglieder sind beitragsfrei.
6. Die Beitragspflicht besteht jeweils für das volle laufende Kalenderjahr (1. Januar bis 31. Dezember) bzw. im Gründungsjahr von der Eintragung des *Vereins* bis zum Ablauf des Geschäftsjahres (Rumpffjahr) und im Fall der Austrittserklärung auch für das gesamte Kalenderjahr, in dem die Austrittserklärung rechtswirksam wird. Diese Beitragsordnung tritt am 1. Januar 2017 in Kraft.
7. Tritt ein neues *Mitglied* dem *Verein* bei, hat es unabhängig vom Beitrittszeitpunkt den vollen *Mitgliedsbeitrag* für das jeweilige *Geschäftsjahr* zu zahlen. Unbeschadet des vorstehenden Satzes kann der *Vorstand* beschließen, den Beitrag nur anteilmäßig zu erheben.
8. Die *Mitgliedsbeiträge* sind Jahresbeiträge und jeweils am 1. Januar eines Jahres im Voraus fällig. Rückerstattung ist ausgeschlossen.

5. ANNEX

Membership fee regulations (example)

1. Unless otherwise specified in these Articles of Association or determined by the *Executive Board*, each *Member* shall bear its own costs of fulfilling its duties and responsibilities as a *Member* within the meaning of these Articles of Association.
2. For the membership of universities or individual departments and SMEs an annual membership fee of 100 euros will be charged.
3. For the membership of scientific institutions / scientific associations an annual membership fee of 500 euros will be charged.
4. For membership of natural persons the annual membership fee is 100 euros.
5. Honorary *Members* are non-contributory.
6. The contribution is compulsory for each full calendar year period (1 January to 31 December) or in the founding year from the registration of the *Association* until the end of the fiscal year (incomplete year), respectively, and in the case of resignation for the entire calendar year in which the withdrawal declaration shall take effect. This Membership Fee Regulation shall enter into force on January 1st, 2017.
7. A new *Member* has to pay the full annual *Membership Fee* independent of the time of accession. Notwithstanding the preceding sentence the *Executive Board* may decide to impose the contribution only proportionally.
8. Membership fees are annual fees. The membership fee is due January 1st. Reimbursement is excluded.