

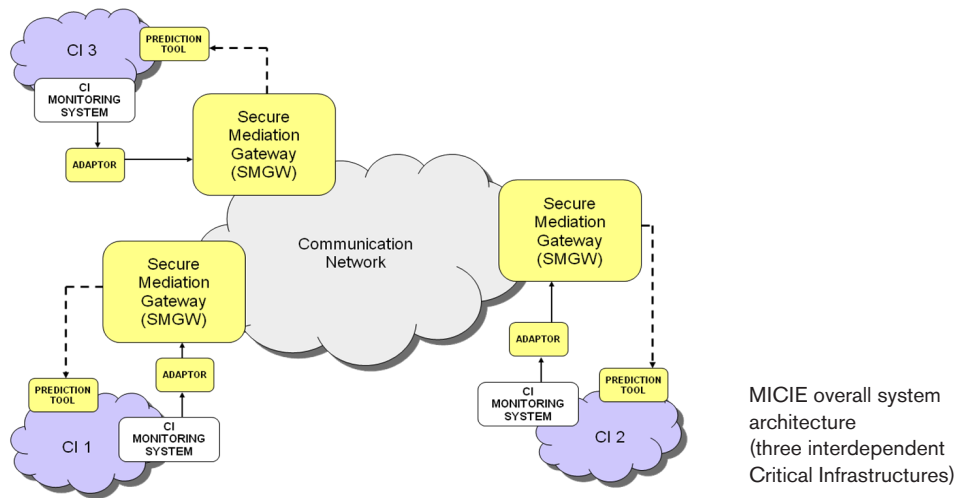
MICIE Tools for Real Time Service Level Risk Analyses for Interdependent Critical Infrastructures

Micie secure mediation gateway as key enabler for information exchange among heterogeneous critical infrastructures

INTRODUCTION

MICIE alerting system will be able to provide, in real time, each CI operator with a CI risk level providing an indication of the ability for the infrastructure to be able to provide, in the near future, its services with the desired QoS in consequence of certain undesired events happened in the reference CI and/or in other interdependent CIs. In order to make an accurate risk prediction, the alerting system needs information regarding the status of the CI object of the analysis, but also regarding all the interdependent CIs. Thus, a new system is needed able to: (i) discover all the distributed information that are relevant for the alerting system, (ii) overcome the heterogeneity of such information that are related to heterogeneous CIs (i.e. electrical infrastructure, telecommunication infrastructure, water distribution infrastructure, etc.), (iii) exchange these information in a secure way over the Internet. To solve all these issues, the MICIE project developed a dedicated node called Secure Mediation Gateway (SMGW).

MICIE SYSTEM ARCHITECTURE



The Secure Mediation Gateway (SMGW) provides a CI with a secure interface for exchanging important status information with other CIs with which it is interdependent. It is designed in order to be independent from the specific CI it belongs to. For this reason, a CI-specific adaptor is used to interconnect the SMGW to the CI. The role of the adaptor is to retrieve information from the CI specific monitoring system, to describe such information using a common data format and to provide these data to the SMGW. A specific adaptor has to be implemented for each CI in the system. The Prediction Tool (PT) is the element of the system in charge of calculating a prediction of the risk for the CI and to provide that information to the CI operator in a display in the CI control room.

To operate, the PT uses as input the models of the CIs system and the real-time information about the status of all the CIs included in the system and provided by the SMGW.

