CORAS Integration Platform

About Coras Platform

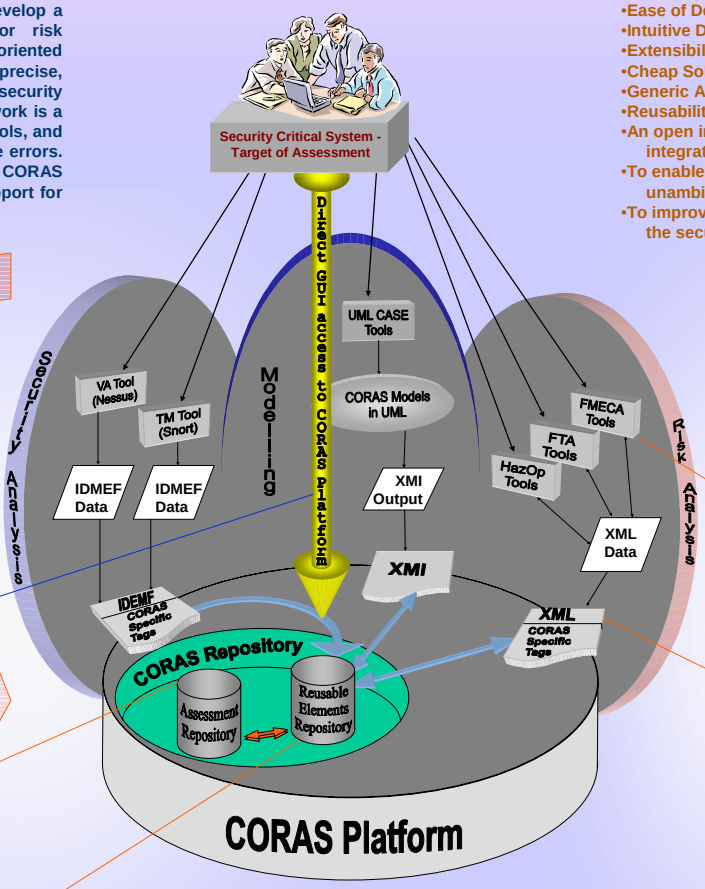
The CORAS platform is computerized tool being developed to support integration of the CORAS framework/process. It is aimed at integrating the various components, technologies and results (risk analysis methods, semiformal methods, object-oriented modelling methods, and tools), into an overall tool-supported CORAS framework/process. This will enable risk analysis in a precise, unambiguous and efficient manner, to improve the security analysis and thereby the security of security-critical systems.

Motivations Behind the Platform

One of the main objectives of CORAS is to develop a practical framework, exploiting methods for risk analysis, semiformal methods for object-oriented modelling, and computerised tools, for a precise, unambiguous, and efficient risk assessment of security critical systems. The use of the CORAS framework is a complex process involving both humans and tools, and as such, is prone to delays, as well as possible errors. With this in mind, one of the objectives of the CORAS project is to produce an computerized tool support for integration of the CORAS framework/process.

Objectives of the Platform

- Ease of Deployment
- Intuitive Design - Easy to Use
- Extensibility, Portability
- Cheap Solution
- Generic Applicability (XML data representation)
- Reusability
- An open infrastructure for computerized integration of the CORAS framework/process
- To enable risk analysis in a precise, unambiguous and efficient manner
- To improve the security analysis and thereby the security of security-critical systems.



Flow of data

Process of the analysis and adding of new cases into the appropriate repository

Direct Access to Stored Information

User-friendly interface for adding new cases and browsing the existing data stored in any of the repositories.

An example of FMECA tools:
- RELEX
- ITEM
- FMEA*Plus*
- Alcatel *Espace*

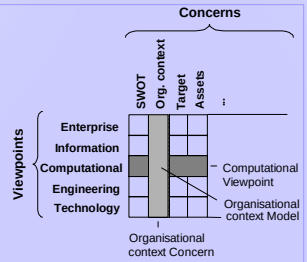
Any of available tools that support specific method could be used for analysis.

Generic framework based on XML data description assures common representation and storage of data in repositories.

Assessment Repository (AR) stores concrete results from already completed assessments and assessments in progress.

Reusable Element Repository (RER) contains reusable elements represented in the XML format. These elements can be derived from any UML CASE tool, Risk Analysis tools or Intrusion Detection applications provided that the output is exported into the universal XML format. Guided by these reusable elements, a risk assessment team can easily instantiate new assessment result in a typical risk assessment session.

Elements stored in both of the repositories are organized in a hierarchical manner in accordance with the CORAS viewpoints and concerns, allowing navigation via the graphical user interfaces provided.



Via **CORAS Experience Package** (CEP), elements in both of the repositories are grouped together and referenced to. Such a packaging scheme (based on the widely used EF concept) is vital for the synthesis of all kinds of experiences drawn from the risk assessment processes, enabling the CORAS repository to document, store, qualify and update the experience base, as well as supplying those experiences back to projects on demand.

Summary of the CORAS Platform

- Open source solution, no purchase necessary
- Tool-independent platform eliminating the need for expensive and proprietary software solutions
- XML as data exchange model, enabling portability
- Extensible & powerful XML-driven solution to meet every customized need
- Integrates 3 major XML data models:
  - XMI (XML Metadata Exchange) standardised by Object Management Group (OMG)
  - CORAS-specific XML-compliant data format targeting Risk Assessment tools
  - IDMEF (Intrusion Detection Messaging Exchange Format) by IETF

CORAS

Risk Assessment of Security Critical Systems

Please contact us

Ketil Stølen
SINTEF Telecom and Informatics
ketil.stolen@sintef.no

Tony Price
Telenor Research and Development
t.price@emailadres.co.uk

http://www.nr.no/coras