Integrated Approach to the Development of the ITER Control System Configuration Data

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Control System Design Support Database: Project Goal

Problem:

• Instrumentation and control (I&C) is present in more than 200 procurements packages ➔ design maturity widely differs; many people involved; data does not belong solely to the central organization;

• Other databases exist in the project which have pieces of information important for I&C (system analysis, 2-D / 3-D models, volume allocation, radiation maps, administrative, …);

• Since the information is scattered and not aligned, it is difficult to understand the current status of I&C design / implementation.

Answer:

• Create a syndicated database dedicated to I&C;

• Import / refer to third-party I&C-relevant data, keep master copies of I&C data.
Database Web-Application

Support entry of the key information for the moment:

- System breakdown trees (physical, functional, geographical, …)
- Components and signals;
- Controllers and variables;
- Administrative data;
- …

Technology: Java, Tomcat, PrimeFaces, Hibernate, MS SQL Server + MS SSRS, Web Services, XML
Conclusion

• The first version of the application was put in production;
• Data entry / import / consolidation started;
• Future areas of interest:
  • Support of remote CODAC Core System databases;
  • Support of the 2-D I&C diagrams tool (SEE System Design);
  • Component life cycle management and inventory control;
  • Support for safety and interlocks functional analysis;
  • Data quality / consistency checks;
  • Improved metrics and reports.