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Experiences in Brownfield Requirements Engineering

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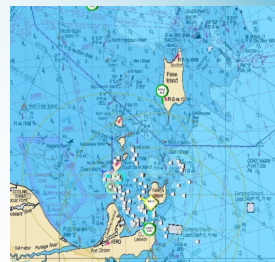
Mission System Upgrade

- Constraints:
 - Client's Legacy Database Schema
 - Client's Proprietary Middleware
- Challenges
 - Users' Concept of Operations from legacy system
- Lessons Learnt
 - "Textbook" techniques worked well in defining how to integrate with legacy database & middleware, and in helping the users understand new concepts of operation
 - Use Cases, UML Behaviour Models, Prototypes



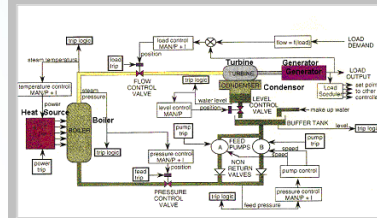
Command and Control

- Constraints
 - 3rd party existing application (90% compliant)
 - Private APIs
 - Proprietary Data Messages
- Challenges
 - Intellectual Property Rights
 - Export regulations
 - Rqts for an "open" architecture to allow for future upgrade
 - Expectations from "un-constrained" research projects
- Lessons Learnt
 - Much debate over how much to document requirements with significant re-use of existing applications
 - Modelling interfaces and re-use of legacy systems difficult with commercial and legal barriers – 18 months to acquire information!
 - Don't start requirements definition until you really understand non-technical constraints



Industrial Plant and Control System

- Constraints
 - Lots of pre-determined Off The Shelf components
- Challenges
 - Brownfield management thinking based on systems developed prior to modern requirements driven programmes
 - 25 yrs since last new development
 - “Everybody knows what it needs to do”
- Lessons Learnt
 - Need to understand the culture of the client and be an agent for change
 - Influence management around the benefits and value of requirements activities



Summary

- The most difficult challenges have often been posed by cultural, commercial and legal factors
- When analysing the context of a project, ensure you understand the commercial issues around legacy applications and interfacing systems
- Don't assume that clients understand the need for requirements – different cultures across different industries
- Be prepared for challenging debates! Negotiating and influencing skills can be all important in agreeing the approach.
- Textbook approaches do work if you can get access to the information and people you need to use them

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