



Case Studies



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- Overview of Case Studies

SIEMENS: Configuration and Reconfiguration in Industry



Domain: Railway interlockings (Eisenbahnstellwerke)



SIEMENS: Configuration and Reconfiguration in Industry

- Model and constraints comprise 20% of source code.
- Configuration effort for the first version of an interlocking system could be reduced from 8 to 2 weeks.
- Easier knowledge base maintenance due to a declarative knowledge representation.
- Training time for new knowledge engineers reduce by approximately one half.
- Code size reduced due to the „multiple“ application of constraints (e.g., consistency checking, explanations, repair, and filtering).

Tacton: Use of Tacton Configurator at FLSmidth



Domain: Equipment for cement plants



Tacton: Use of Tacton Configurator at FLSmidth

- Less time spent on product configuration (compared to earlier configuration processes).
- Shorter lead times for proposals and order processing (reduced from months to days).
- More standard configurations, i.e., “more customization than needed” can be avoided; result: reduced cost for supplying the product.
- Improved quality of configurations, i.e., risk of incorrect configuration is reduced.
- Increased market share due to freed resources (e.g., in sales and production)



encoway: From ERP to Sales-Oriented Configuration

The screenshot shows the BOGE sellAIR configuration tool. The window title is "BOGE sellAIR". The top bar contains the BOGE logo, the slogan "BOGE AIR. THE AIR TO WORK.", language options "German English", and an "Exit" button. Below this is a navigation bar with "Catalogue", "Configuration", and "Shopping Cart". The main area is titled "C 4 screw compressor" and has tabs for "General", "Tech. Data", "Control", and "trinity". The "Tech. Data" tab is active, showing a list of configuration options for a "C 4" compressor. The options include Type, Max. pressure, Supply voltage, Control, Net pressure control, Idle running control, Mains disconnection device, Cyclone separator, High pressure hose, Oil first filling, and Countries. Each option has a value and a checkmark icon. At the bottom, there are buttons for "Reset configuration", "Reset view", and "Show result". A note at the bottom left states "Mandatory fields are marked with *". The bottom right corner shows "Application: 1.19 | Dataversion: 20111206".

Option	Value	Status
Type	C 4	✓
* Max. pressure	10 bar	✓
Supply voltage	400V / 50Hz	✓
Control	BASIC	✓
* Net pressure control	mount. network pressure sensor	✓
Idle running control	Idling control (short running)	✓
Mains disconnection device	installed in switch cabinet	✓
Cyclone separator		
High pressure hose	High pressure hose 500mm	✓
Oil first filling		
Countries	<input type="checkbox"/> Transport preservation <input type="checkbox"/> english texts <input type="checkbox"/> french texts <input type="checkbox"/> czech texts <input type="checkbox"/> danish texts <input type="checkbox"/> hungarian texts <input type="checkbox"/> italian texts	

Domain: Compressed air systems

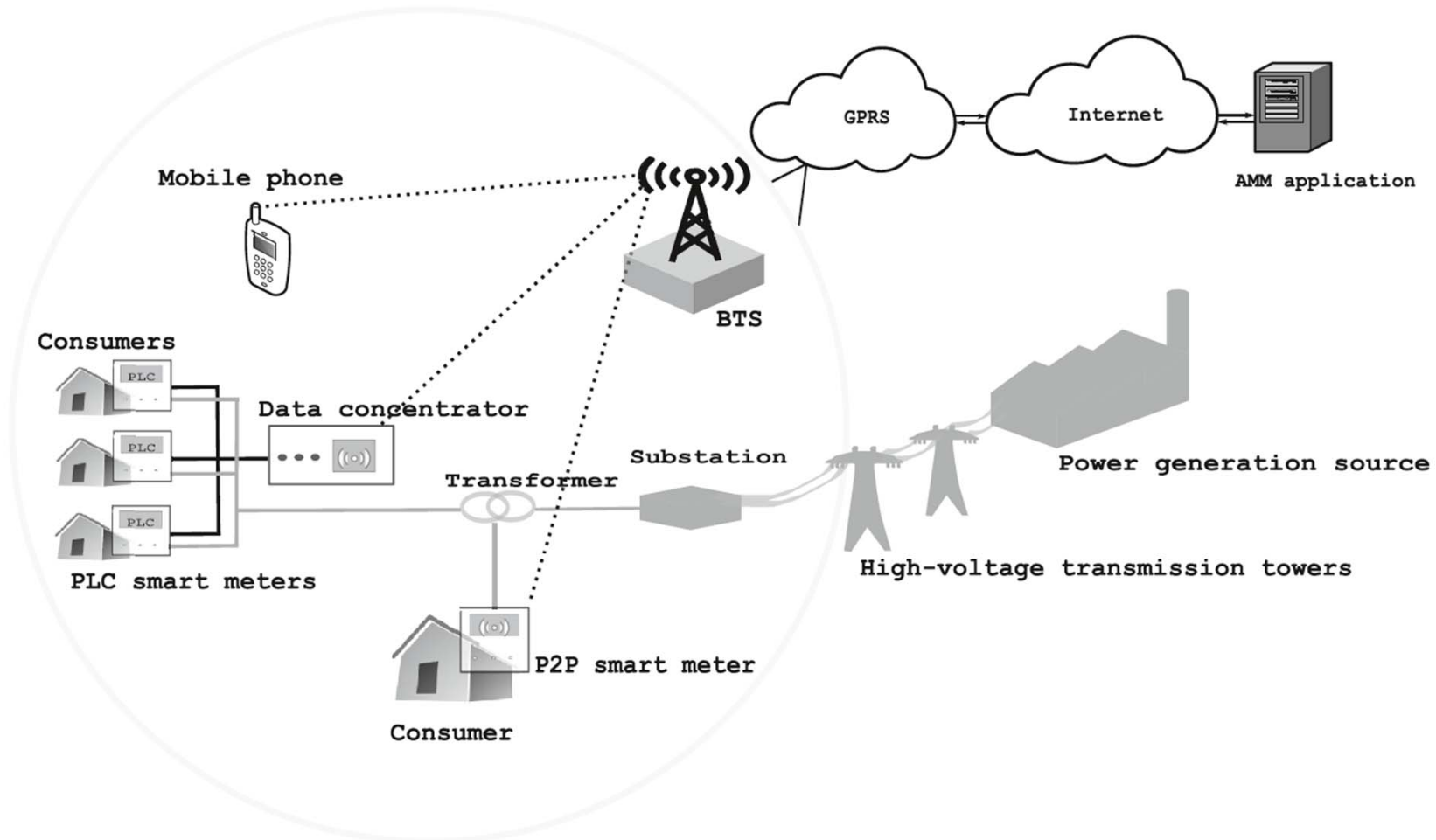
Configuration Related Research Challenges



Tacton: Use of Tacton Configurator at FLSmidth

- Running sales application at the German company Boge.
- Up-to-date product models in sales application and ERP counterparts.
- Fast and technically correct product proposals.
- Customers and dealers also profit from configuration functionalities

Kapsch: Reconfiguration of Mobile Phone Networks



Kapsch: Reconfiguration of Mobile Phone Networks

- Application providers can easily figure out whether their requirements regarding mobile phone network capabilities can be fulfilled.
- Mobile phone network providers can exploit configuration to change/adapt network parameters to take into account new requirements.
- Network equipment vendors can promote reconfigurations of existing networks (=offers for network service providers).



SIEMENS VAI: Configuring and Generating Technical Documents

The screenshot displays the Siemens VAI Configuration Wizard interface. The main window is titled "DOPLER ConfigurationWizard" and has a menu bar with "Project", "Advanced", and "Help". Below the menu bar is a toolbar with icons for "1. Start", "2. Configure", "3. Generate", and "4. Share", along with "Save", "Filter Decisions", "Undo", and "Redo". The "2. Configure" step is active, showing a "Decisions" table with the following data:

Decision	Value
Project Name:	PRJ_ASC_D0014A3
CCM Number:	CC1
Project type:	Complete L2
Split:	before 2011
Reporting?	no
Is the Common Server included?	yes
Document Number:	SAM_V001
SAP Number:	D0014A3

Annotations on the screenshot describe the workflow:

- (1) The configurator makes configuration decisions
- (2) The tool computes the assets to be part of the derived product
- (3) The configurator runs the generator
- (4) The generator automatically creates Microsoft Word documents

The "Required Assets" panel on the right lists various assets such as "Common Server", "Component_CommonServer", "Equipment Expert", "General", "HistoryDataServer", "L1 Server", "Release to Common Server", "Repository Configuration for Level2", and "Server.Processes".

Below the main window, a "Progress Information" dialog box shows "Generate Documents" with a progress bar and a "Cancel" button. In the background, a Microsoft Word document titled "MasterDocument.doc" is open, displaying a table of contents for a "System Administration Manual".

Figure 5-13: Install MSS Updates Start

Continue with Finish to start the installation. First all selected updates are downloaded, then a confirmation is required for installing. Press 'Install all' to start the installation process.



SIEMENS VAI: Configuring and Generating Technical Documents

- 100 users of the tool manage about 15 product lines. (configuration and generation of documents).
- Documents used to provide information to customers or to prepare customer meetings.
- Avoidance of time-consuming and error-prone manual adaptation of documentations.
- Workload of experts is reduced since because persons less familiar with “implicit” are supported and make less mistakes.

Configuring Services and Processes

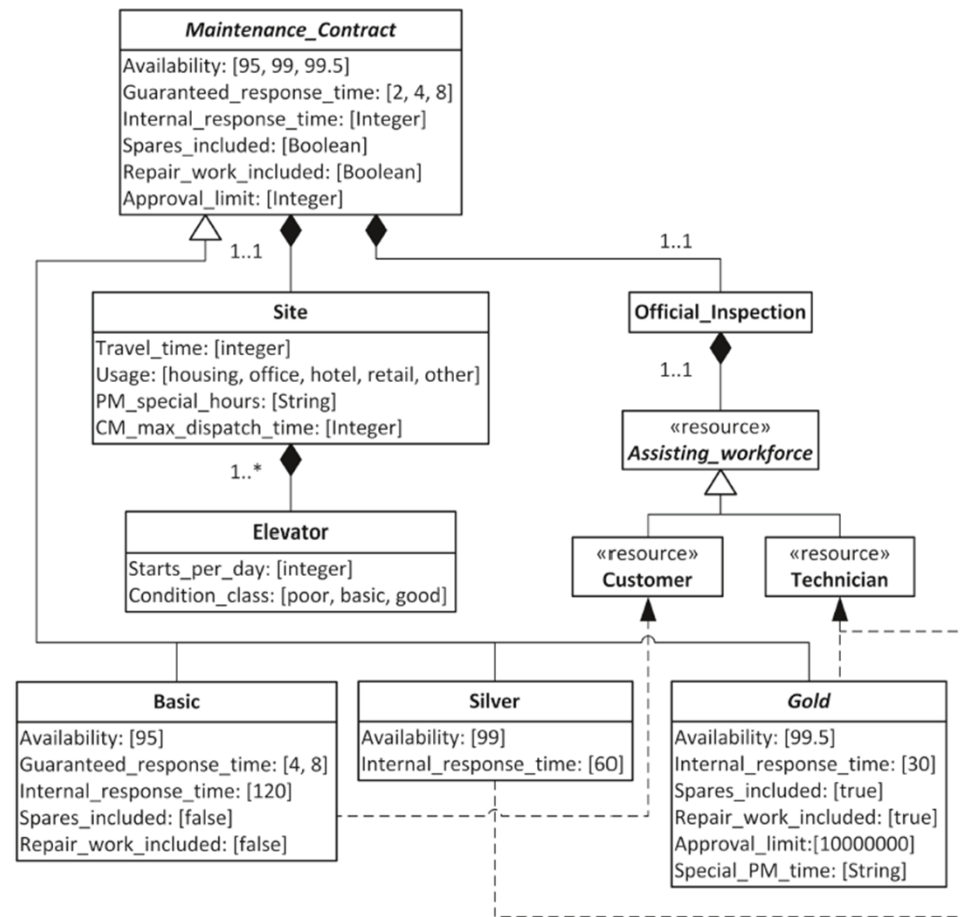


FIGURE 21.1
Elevator Maintenance contract configuration model.



Configuring Services and Processes

- Many modern product offerings are bundles of physical and service elements.
- Example: elevator maintenance contracts.
- Extension of configuration technologies to longterm customer relationships.
- Process configuration successful in several large projects (e.g., in the film industry).



Thank You!