

ASF i N A I G

RELIABILITY ALL THE WAY

ASF i N A I G's Approach to Intelligent Infrastructure Management

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 ASECAP 38th Study & Information Days 2010, 1st June 2010

Agenda

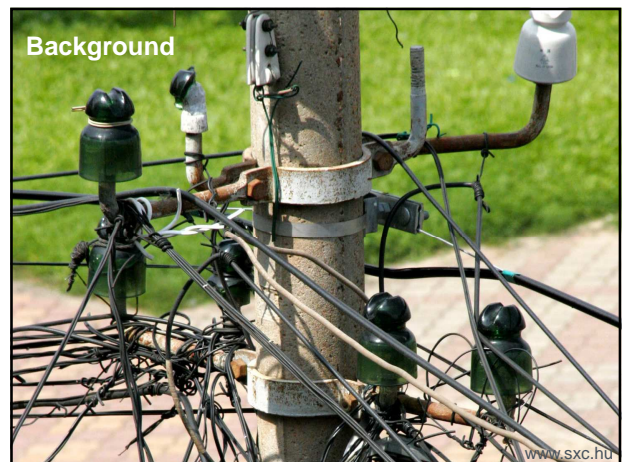
- Background
- Road operator requirements
- Functionality
- Outlook

Background

ASF i N A I G, the Austrian operator for:

- ~2.135 km of motorway network
- 415 TCU gantries
- 3.200 video cameras
- 10.000 components in BUS

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Road Operator Requirements

- Real-time status via permanent connection to system components
- Centralized database for facility inventory
- Graphical overview / location of components
- Rapid error / failure detection in case of incidents
- Live and historical reporting functionality
- Maintenance planning and operation
- Ticketing system

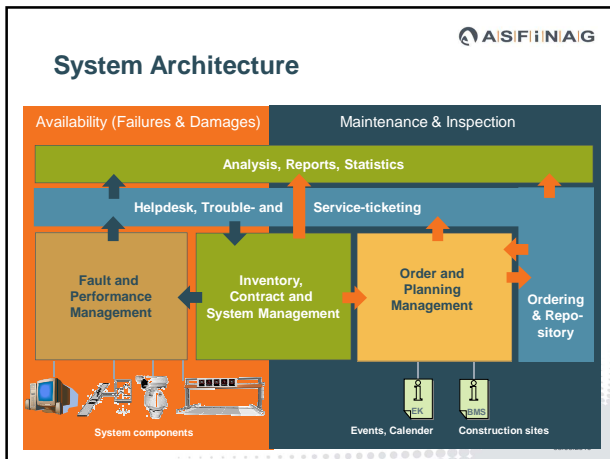
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Road Operator Requirements

➔ **Complex requirements not fully covered by classic Monitoring & Maintenance Systems**

- coal mining
- electricity providing
- gas transporting
- car manufacturing
- power plants manufacturing
- baggage handling at Airports
- motorways operating

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Inventory, Contract and System Management

System

- core of system architecture

Inventory

- basis for overall supervision and supply-management
- 10.000 total components

Contracts

- 11 subcontractors currently managed via BÜS
- all new contracts in area of availability/ maintenance are to be represented

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Order and Planning Management

Order

- functionality for preventive ordering of necessary components

Planning

- preventive maintenance based on predetermined work plan
- yearly plan for each for each sub-contractors fully automatically generated
- Interfaces to building site management and incident calendar

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Fault and Performance Management

Fault and Performance

- geo-referencing of devices/ single components
- mapping to relevant sub-contractor
- direct contact based on agreements with sub-contractors
- automatic recording of recovery time
- ongoing recording for system/ components performance

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Helpdesk, Trouble- and Service-ticketing, Ordering & Repository

- Administration of troubleshooting process
- Management of tickets (trouble- and service-tickets)
- Supporting sub-contractors as well as ASFINAG operators

Analysis, Reports, Statistics

- Monthly/ quarterly standardized analysis
 - overview faults and damages
 - fully automatic generated management summaries
 - benchmarking contractors and sub-contractors
 - benchmarking of systems and services (performance)
 - benchmarking of availability

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Range of work for maintenance contractors

Maintenance Management 24h hotline Servicing (planning & coordinating)		Responsibility for resources Quality management (reporting)
Troubleshooting Operate (penalties response and restore time) Reporting, Documentation	Servicing Operate Reporting, Documentation	
Software and Hardware Management Expostulation Exchange of devices		
Surety of equipment availability Target value agreement (penalties)		Contractual Surety Liability Defects Liability Execution by substitution

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Cost/Benefits

Benefits
Minimized effort needed ...

- ... for managing sub-contractors
- ... for identifying and locating failures/ damages
- ... for handling of troubleshooting
- ... for creating customized performance benchmarks

Costs

- Effort to set up core system
- Effort to connect new/ existing components
- Effort to train operators

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Future BÜS areas of usage in tunnel operations

- Unification of planning, realization, documentation, analytics for the area of tunnel maintenance
 - Support in centralization of tunnel operation
 - Improvement of internal processes
- For above mentioned purposes a beauty contest was realized. BÜS trumped 2 competitive tools

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Thank you for your attention!
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