

A 3D wireframe car model, likely a Volvo, is positioned on a dark, angular platform. The car's body is composed of a fine grid of points, while the interior and wheels are solid. The background features a complex, low-poly geometric landscape in shades of blue and white, with some areas showing a wireframe mesh. The overall aesthetic is modern and technical.

Groundbreaking Simulation Solutions

physics on screen

SPDRM

A platform for
Process, Data and Resources Management for CAE

Challenges in CAE



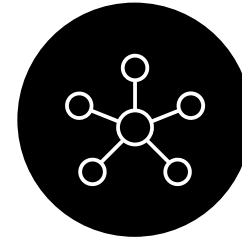
Individualization



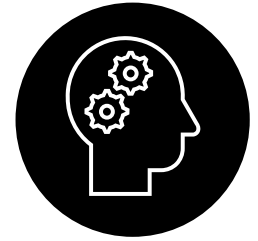
Regulations



Time to market



**Distributed product
development**



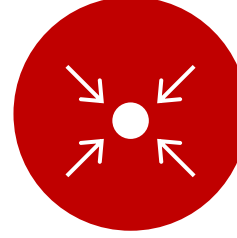
Expertise



Delays



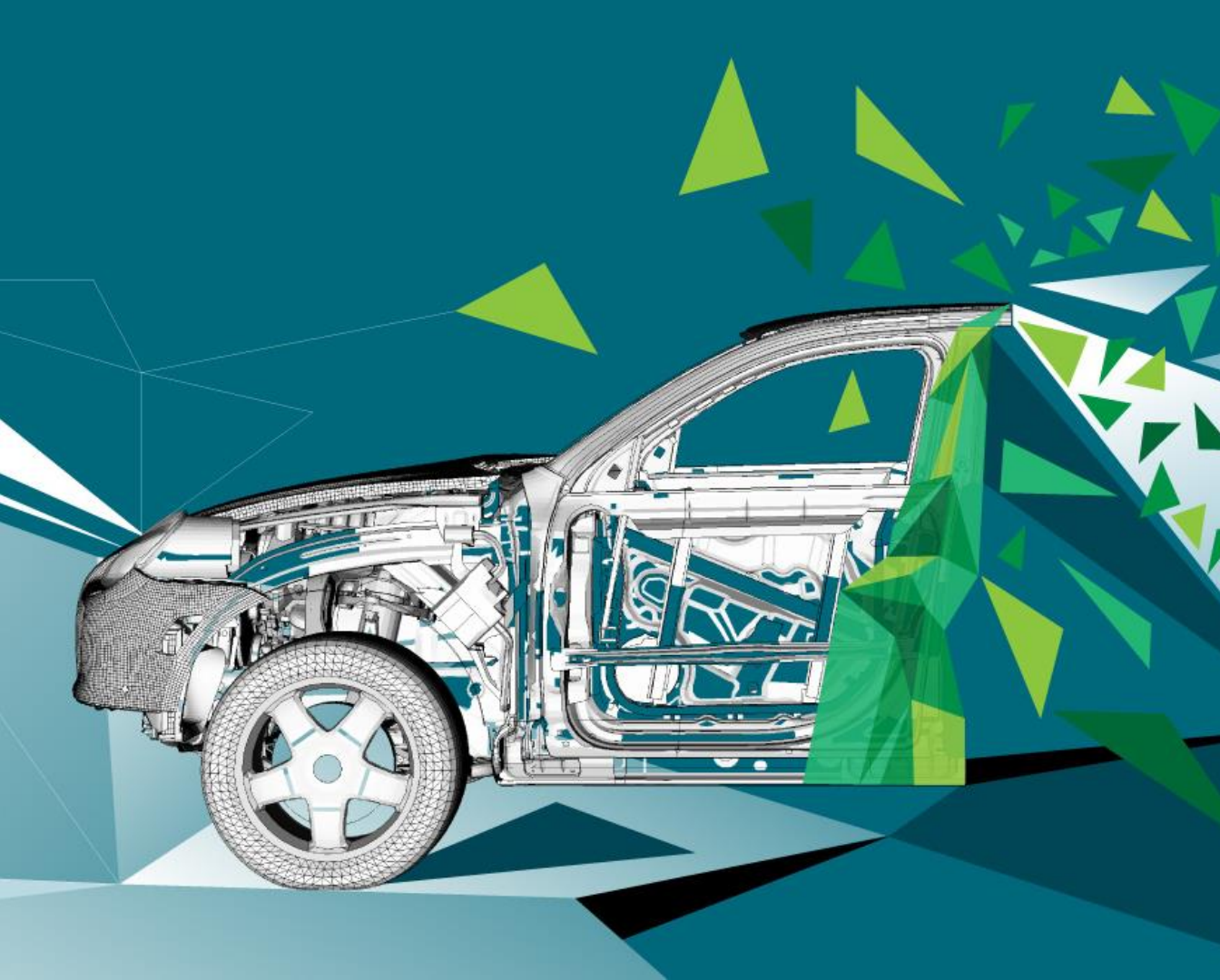
**Low confidence in the
simulation results**



**Missing a "single
source of truth"**



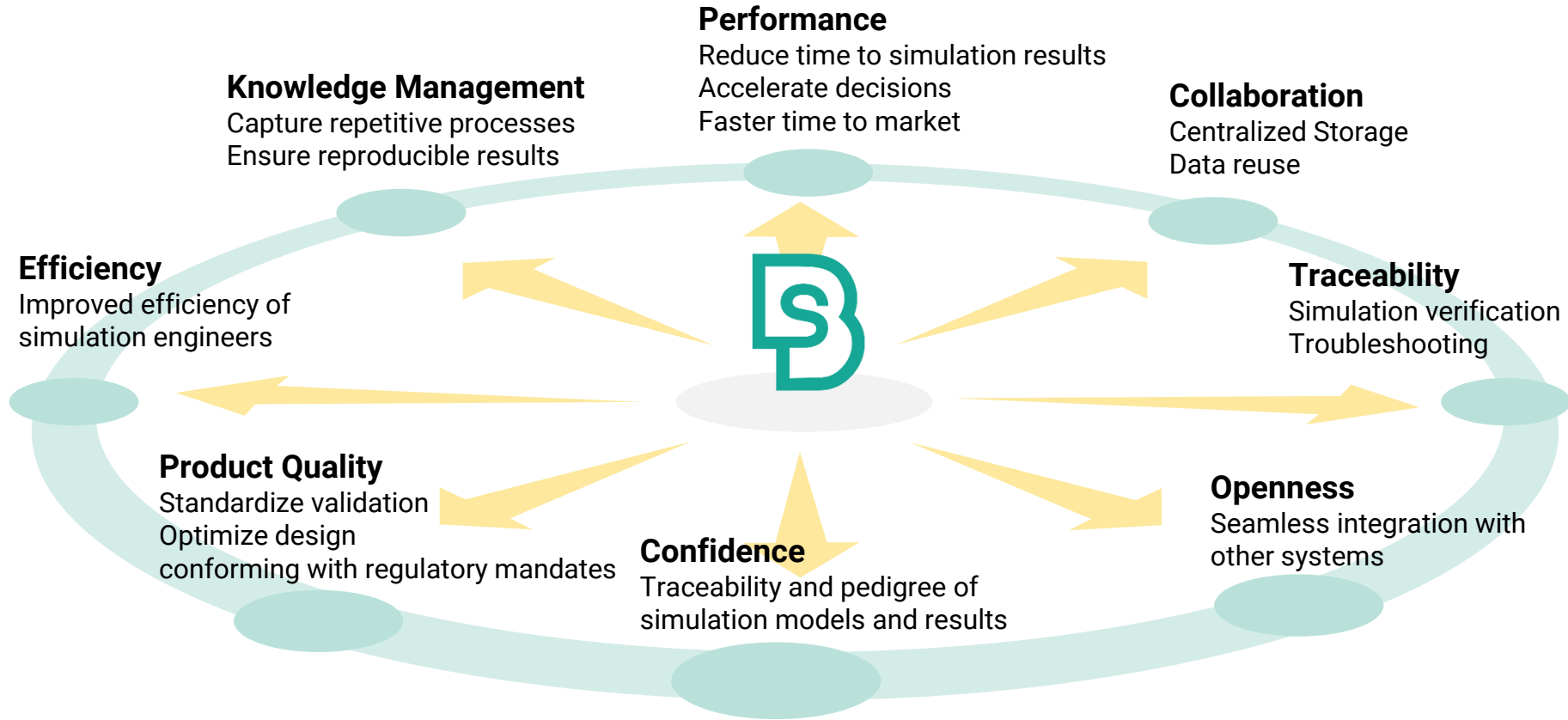
**Higher product
development cost**



Simulation Process, Data & Resources Manager enables you to manage simulation knowledge and orchestrate the full spectrum of your virtual product development procedures.



Business Benefits in an SPDRM-based Simulation Environment



SPDRM contribution to Business Goals

Collaboration

Traceability



with no SPDRM system



Openness



with SPDRM

Efficiency

Knowledge Management



with no SPDRM system



Confidence



Product Quality

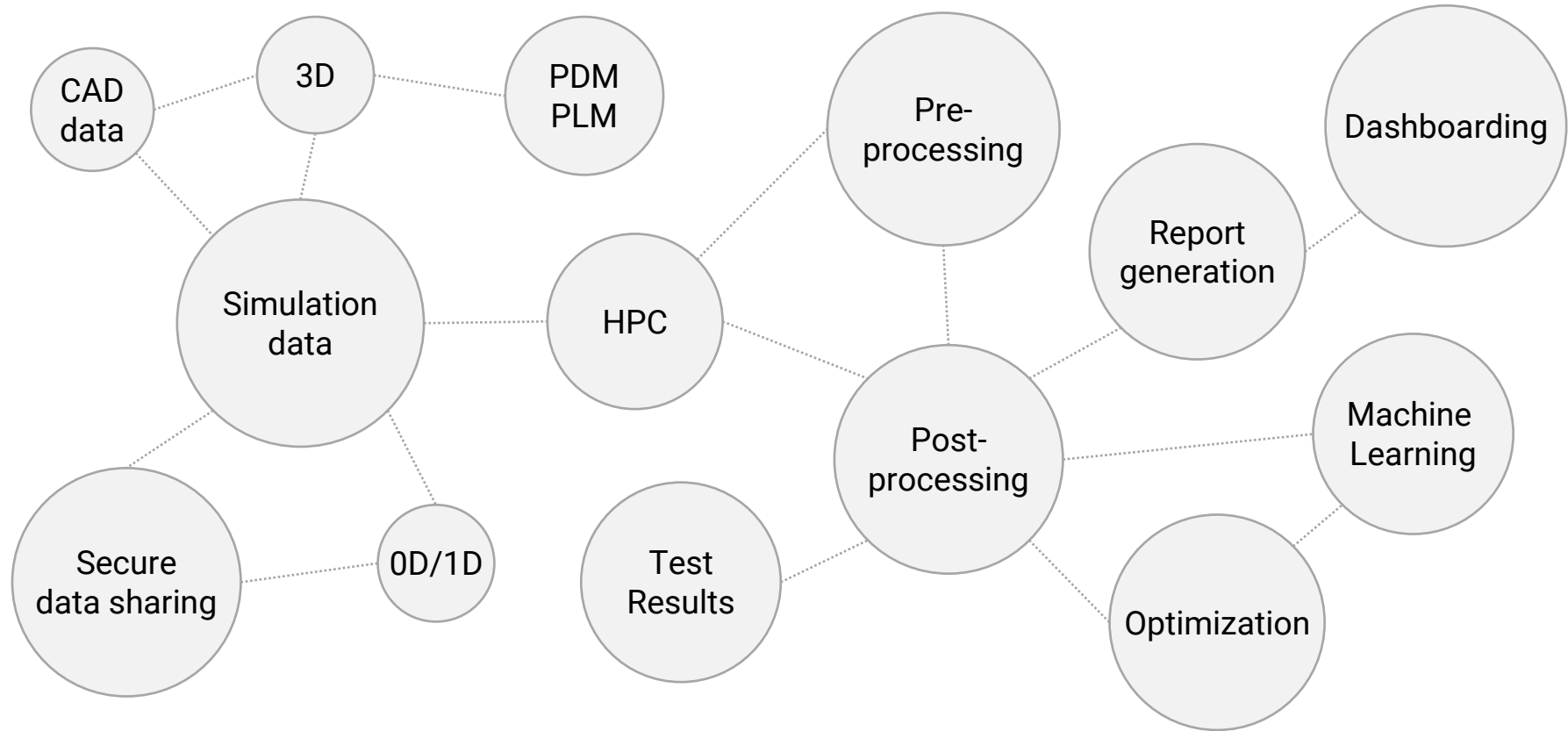


with SPDRM

*with SPDRM
& BETA Suite*

Performance

Components of the SPDM landscape brought together by SPDRM



SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness

SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness

SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness

Users | Client-side



SPDRM Client



ANSA



META

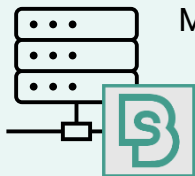


3rd party app

Server-side



Data Server
MySQL, Oracle



SPDRM Server



Data Vaults



Multi-site Architecture



SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness

Data Model

Pre-configured for Simulation data
From Parts and Sub-assemblies to Runs and Reports
Highly customizable

Version Control

Automatic version control based on Status
Prevention of accidental overwrites and deletions
Versioning on user and team-level

Traceability

Complete traceability, from CAD part to Simulation Run and Report
Graphical representation of data relationships with impact analysis tools

Data Security

Authentication via the Enterprise User Management system
Role-based access control for all data
SSL communication between SPDRM server and client



SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness

Process Design & Execution

Capture knowledge in Process Templates

Track information on what, where, how, when and by whom

Get access to process statistics

HPC Submission

Assisted interface with HPC systems

Job submission and monitoring

Get notifications for job status changes

Use of remote resources

Execute time- and resource-consuming tasks on BETA Apps Launcher (BAL)

Benefit from the OOTB load balancing and queue

Ideal for tasks like CAD translation, meshing, ML training etc.

Modular Methodology

Benefit from the state-of-the-art methods for MRM in ANSA

Exploit the built-in library of "Build" processes per Discipline and Target Solver

Create optimization studies



SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness



Desktop client



Web client

SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness



Desktop client



Web client

SPDRM features

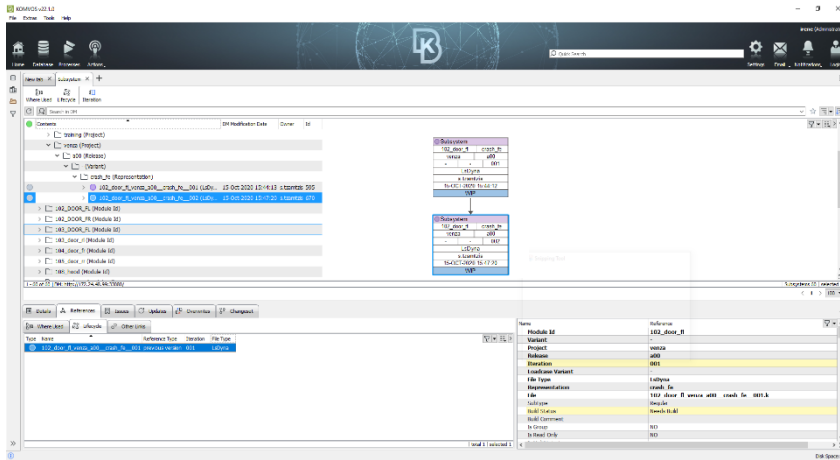
Architecture

Data Management

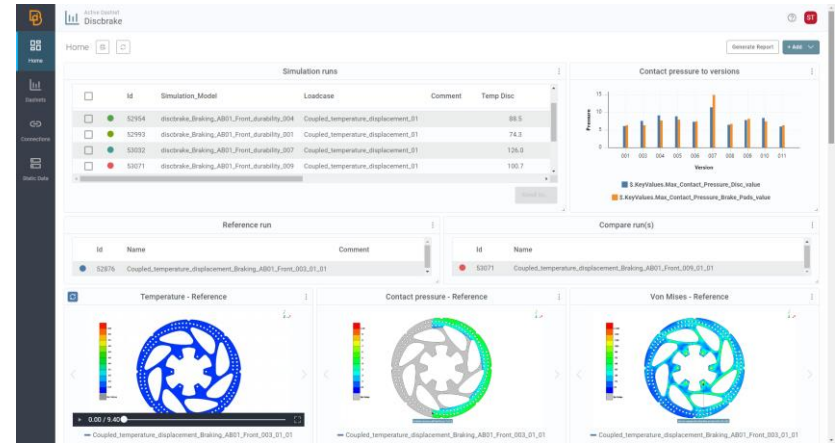
Process Management

Client Apps

Openness



Desktop client



Web client

SPDRM features

Architecture

Data Management

Process Management

Client Apps

Openness

REST API

Integrate SPDRM with other systems by building a direct interface.

Complete library of REST services for Data and Process Management

Rich documentation with elaborate information and examples

SPDRM Streamer

Real-time streaming of database changes to third party, analytics tools

To be consumed by Knowledge Base, data analytics and Dashboarding applications

Issue Management

Integrate SPDRM's Issue Management with JIRA Issue Tracking System

Create JIRA Issues through SPDRM's Issue Management and vice-versa



Case Study

A global automotive OEM adopts SPDRM for Simulation Process and Data Management

About the client...

- Using ANSA, META and several other tools
- Model Build done in ANSA
- Heavy use of Excel Lists for planning of activities

Aims

- Simulation data management database
- Lead-time reduction
- Activities monitoring
- Efficient collaboration
- Reduce modelling time
- Help ensure quality
- Help analysts focus on evaluation and create counter-measures

Challenges

- Geographically dispersed teams
- Production of a high volume of files in global scale
- High number of concurrent users
- Large user base

Solution

Implementation of SPDRM:

Data Management

- Model and Process Configuration
- CAE data organization
- Procurement Automation

Process Management

- Lifecycle Management
- Control of execution

Issue Management

- Quality issues Monitoring

Approach

Agile approach


Work in Sprints:

- Decide User Stories to work on
- Prepare, develop and deliver
- Integrate and validate
- Demo and feedback

Add some value for the client in every Sprint

Deploy and experience first gains within 11 months.

Business Impact (after 1 year of use)

 **75%**
lead-time

For procurement and data organization

 **50%**
less effort

Due to data reuse (meshes and modules)

 **50%**
modelling issues

In a year

With simultaneously increased quality and consistency with reference DMU

Working with SPDRM



Model Build Engineer



CAE Modelling Team Leader



Analysis Engineer



CAE Manager



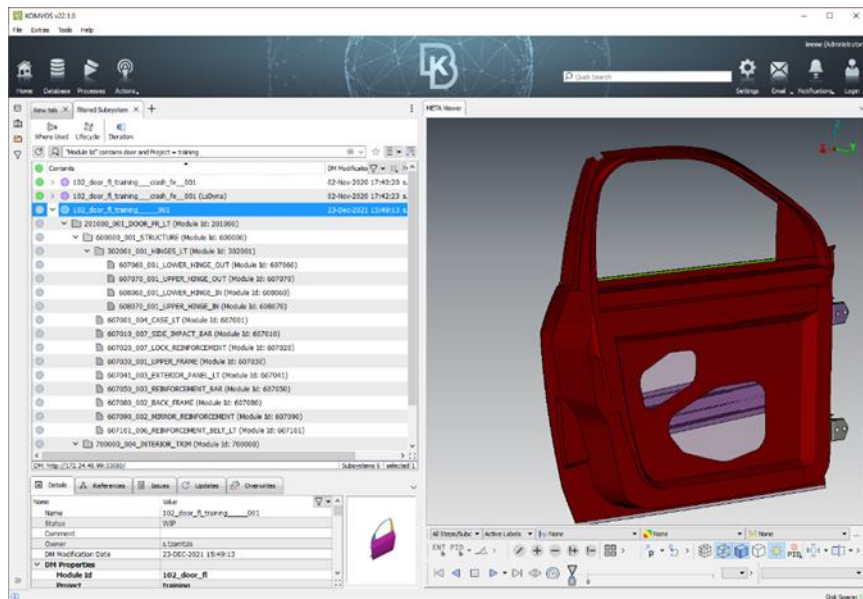
IT Administrator



Working with SPDRM

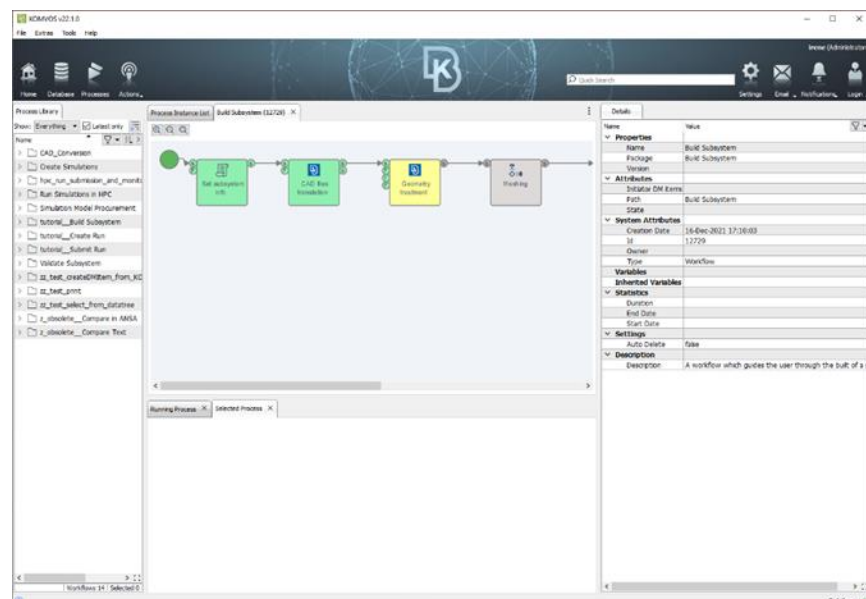
As a Model Build engineer

Primary Workspace



Data Management

Search data, review product structure
Open in Viewer or Edit in application



Process Management

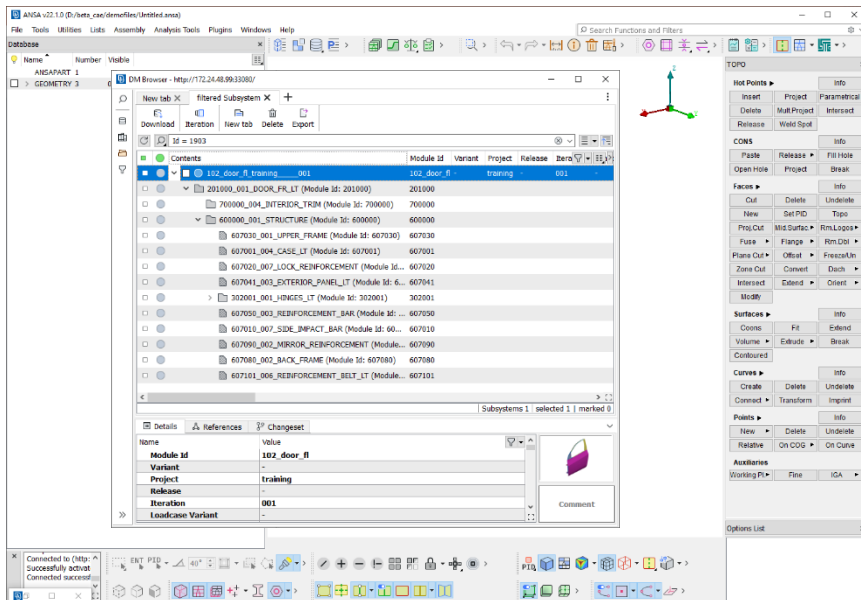
Execute Business Process Templates



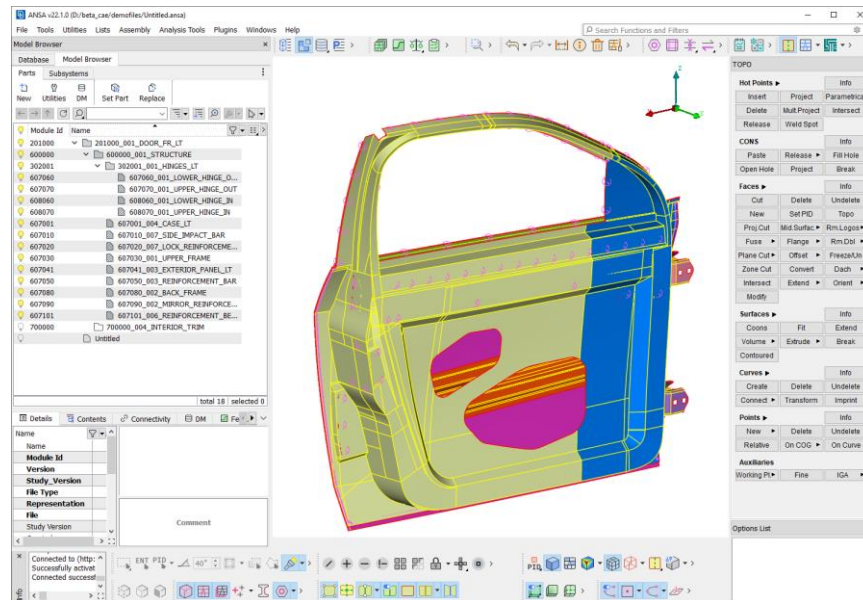
Working with SPDRM As a Model Build engineer

Primary Workspace

ANSA users



DM Browser
Search > Download



Model Browser
Build & Save



Working with SPDRM

As a Model Build engineer

Key-features

- Import data from PDM System
- Run CAD Conversion on remote resources
- Detect conflicts automatically on save
- Version control
- Identify carry-over parts
- Compare part and Subsystem versions
- Make use of ANSA's Build Processes
- Make use of ANSA's "Smart Assembly" methodology

Benefits

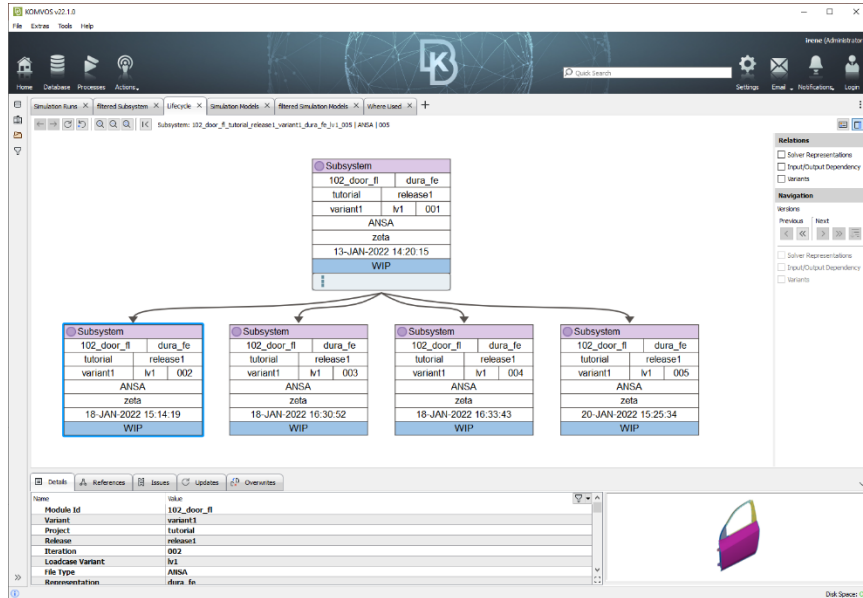
- Automatic application of naming rules
- Automatic use of Lifecycle rules
- Always work with up-to-date inputs
- Do not translate again carry-over or unchanged parts
- Re-use meshes among subsystems
- Re-use subsystems among different model variants



Working with SPDRM

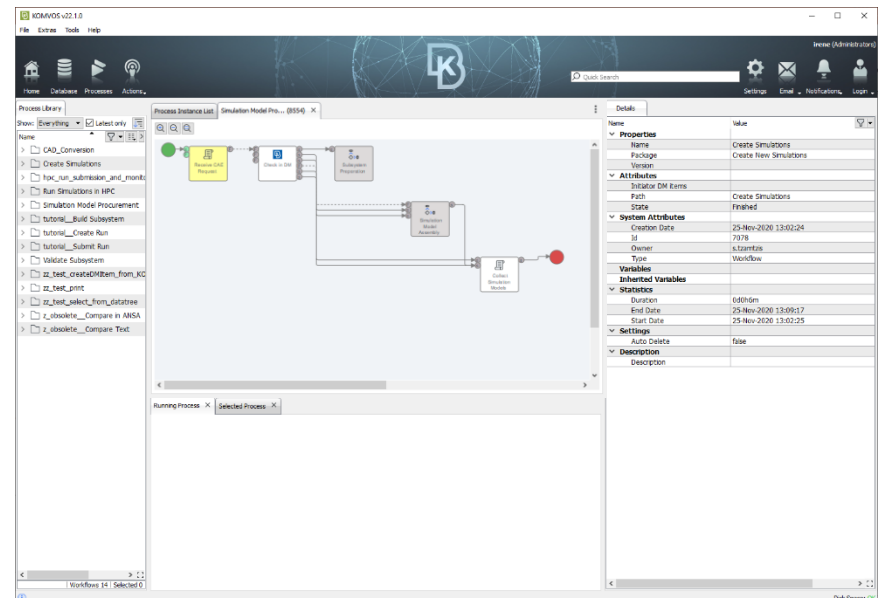
As a CAE Modelling Team Leader

Primary Workspace



Data Management

Use data reviewing tools



Process Management

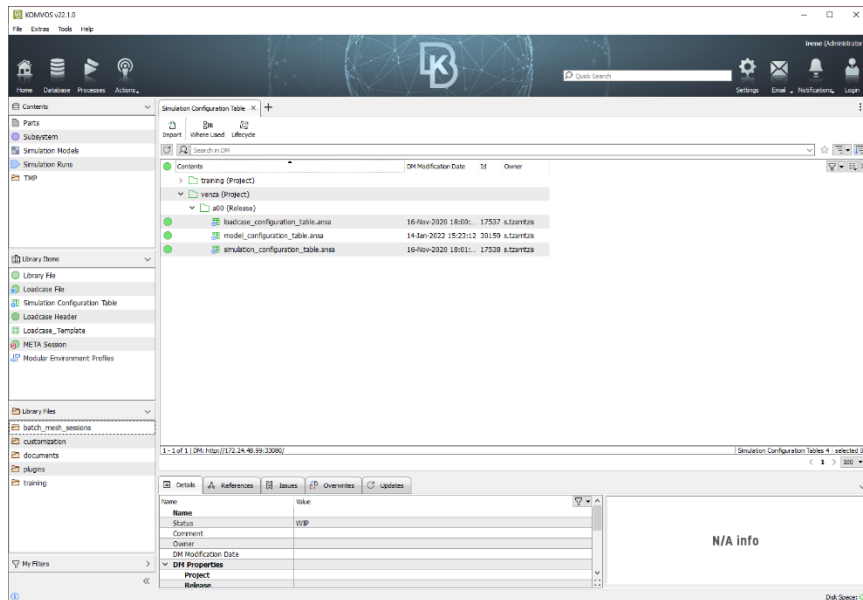
Monitor progress of tasks
Design Process Templates



Working with SPDRM

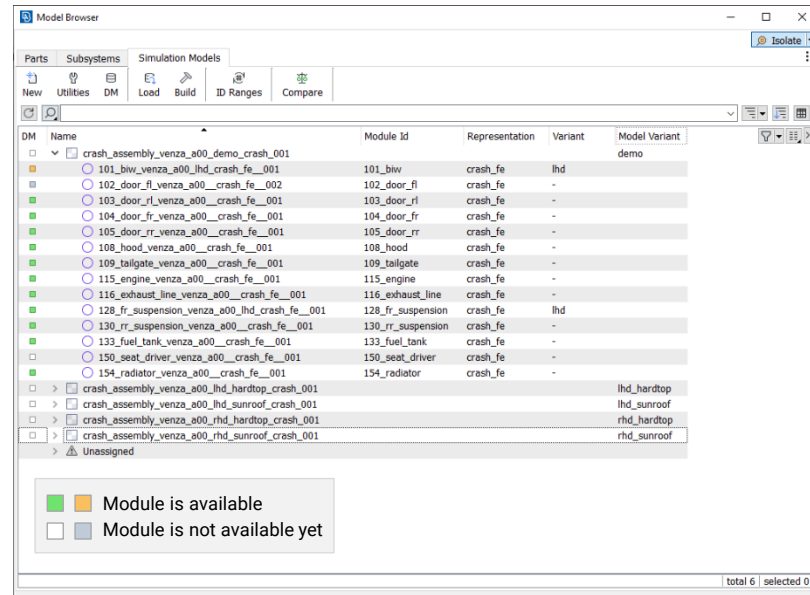
As a CAE Modelling Team Leader

Primary Workspace



Project monitoring

Review Model Configuration templates



Project monitoring

Check availability of required components



Working with SPDRM

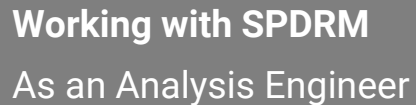
As a CAE Modelling Team Leader

Key-features

- Capture Standard Operating Procedures as Process Templates, with information on data flow, applications and assignees
- Schedule the execution of automated tasks
- Populate the CAE library with templates and other library data, like materials, etc.
- Review data pedigree to understand data dependencies and perform impact or root cause analysis
- Monitor the progress of team tasks
- Plan the Simulation Models to be created for a certain milestone and monitor availability of required resources

Benefits

- Standardize and automate Standard Operating Procedures
- Identify the source of delays
- Have a “single source of truth” for all CAE data
- Identify impact of errors or changes based on relationship diagrams
- Improve overall model quality with right lifecycle and standardized validation tasks



Desktop client



Navigate Simulations Tree
View processed results



Set-up Simulation Runs and Submit to HPC

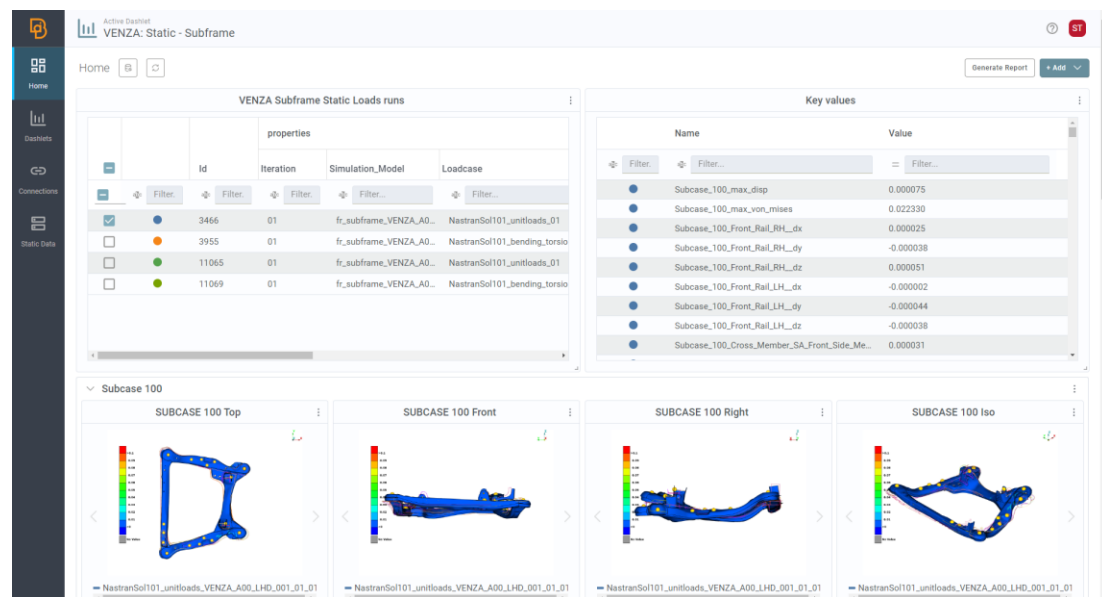


Working with SPDRM

As an Analysis Engineer

Primary Workspace

Web-client



ANSERS

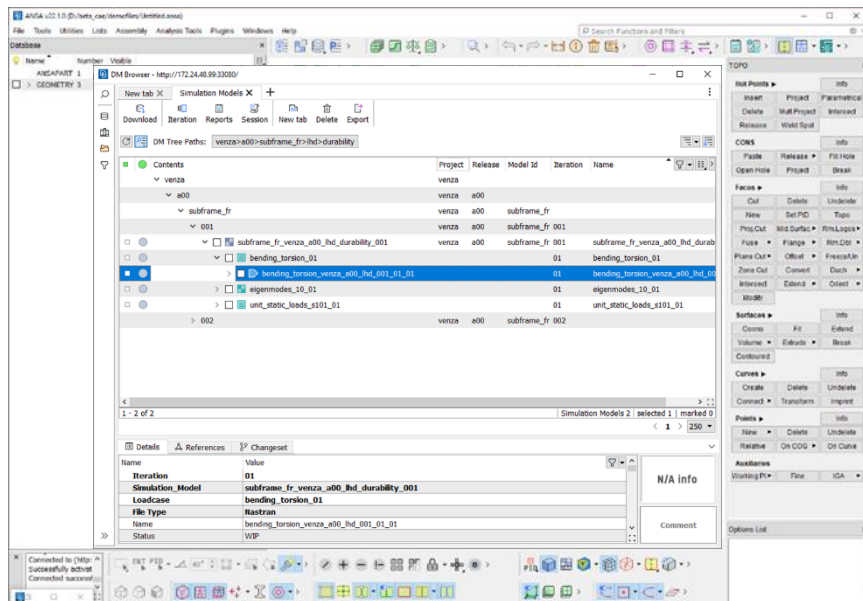
Use pre-configured dashboards for results review and assessment



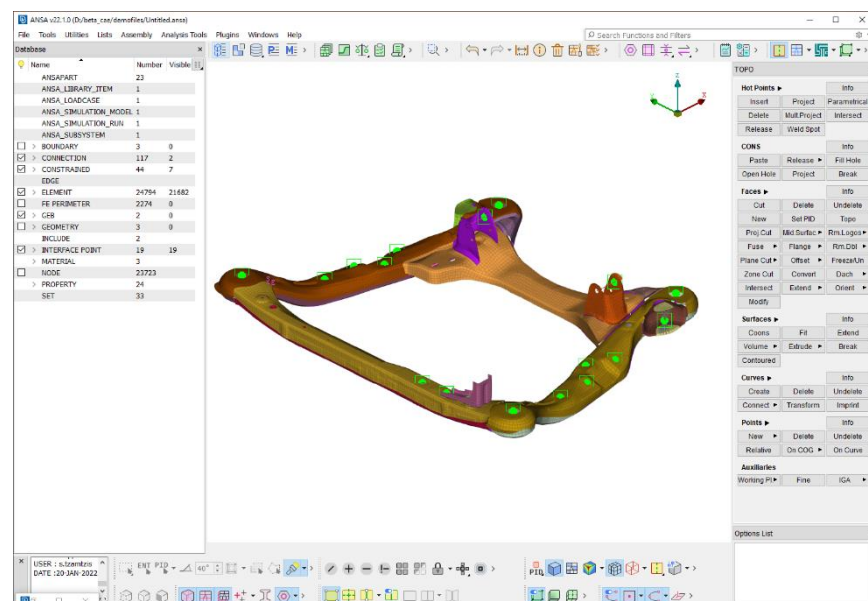
Working with SPDRM As an Analysis Engineer

Primary Workspace

ANSA users



DM Browser - Select Run > Next Iteration



Introduce model improvement
Model Browser: Build and Save



Working with SPDRM

As an Analysis Engineer

Key-features

- Build Simulation Runs in ANSA or other pre-processors and store them in SPDRM, keeping links to their contents
- Make use of standard processes for job submission, monitoring and post-processing
- Review Simulation Runs and their processed results in the embedded Viewer
- Compare on-the-fly the models of different simulation versions and their results in the embedded viewer or logbook
- Create correlation studies with Test Results through the embedded interface towards ASAM-ODS databases
- Build Optimization Studies in order to improve the behavior of the system
- Orchestrate data driven Machine Learning for the prediction of key-value, curves and 3d simulation results

Benefits

- Automatic application of naming rules
- Automatic use of Lifecycle rules
- Effortless identification of updates
- Set-up of Simulation Runs in KOMVOS or in ANSA
- Review and compare results directly in KOMVOS or in the web-application, the CAE Dashboard
- Correlate against test within the same workspace
- Couple Data Analytics techniques with Simulation Data Management

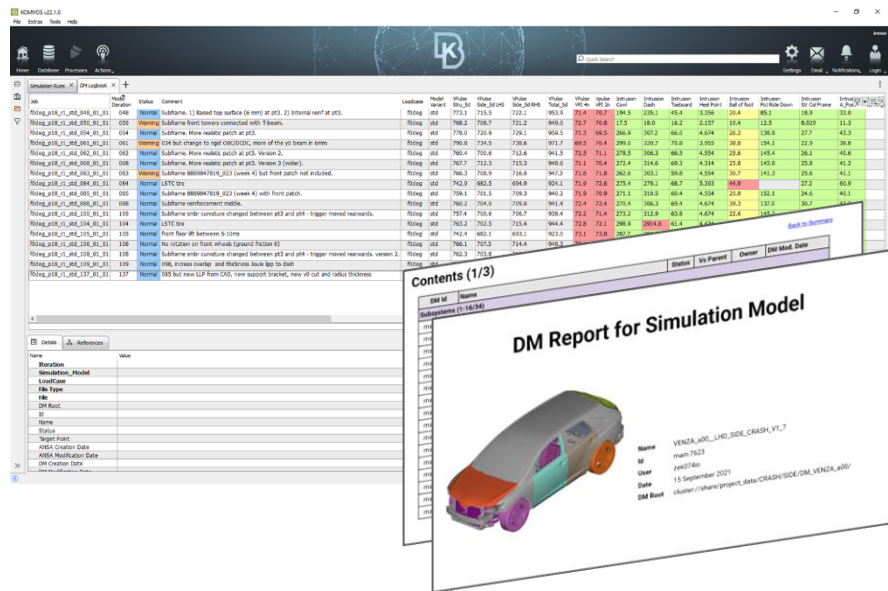


Working with SPDRM

As a CAE Manager

Primary Workspace

Desktop client



Web-client



Reporting Tools
Simulation Logbooks
DM Reports



ANSERS
Project statistics



Working with SPDRM

As a CAE Manager

Key-features

- Extract reports for simulation
- Visualize Summarized Reports in the dashboard
- Get statistics for past process executions
- Visualize project statistics in the Dashboard

Benefits

- Have a “single source of truth” for all CAE data
- Use standardized dashboards for Project Monitoring

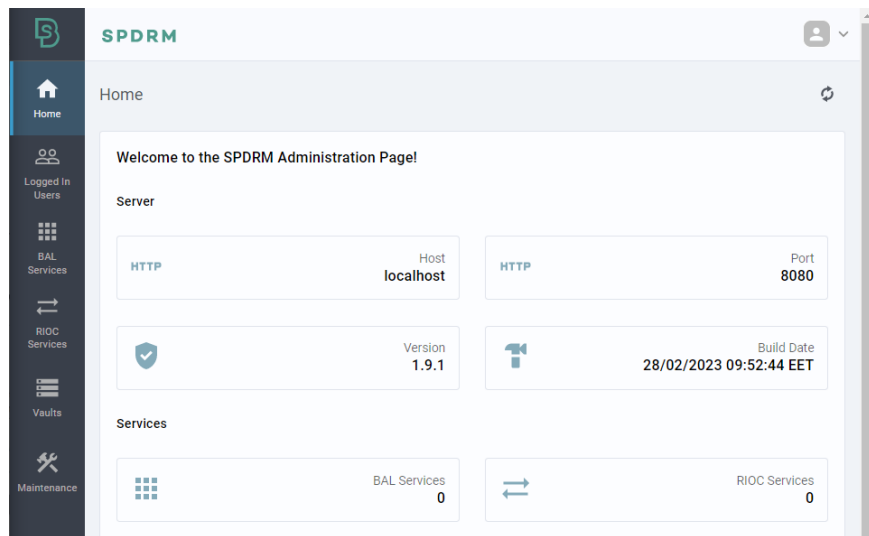


Working with SPDRM

As an IT Administrator

Primary Workspace

Web Admin console



Web interface for key administrator tasks
Statistics / Diagnostics / Maintenance

Health Monitoring



Health check of SPDRM components
Operating System / Database / Application Server



Working with SPDRM

As an IT Administrator

Key-features

- Visualize application statistics in the Web Admin Console
- Centralized management of BETA Suite Settings
- Central control of applications and testing of new software versions
- Purging / retrieval of data files, maintaining their metadata
- Standardized dashboards for Health Monitoring
- Hardware resource-based decisions

Benefits

- Ensure seamless business continuity
- Automate and systematize software update tasks
- Control the footprint of current and legacy data on the storage
- Identify underlying issues and prevent degradation of system performance

Interested in SPDRM?



Trial Period

Product demonstration
PoC environment:
- preparation
- delivery & installation
- guided tour
Evaluation License

System Design & Preparation

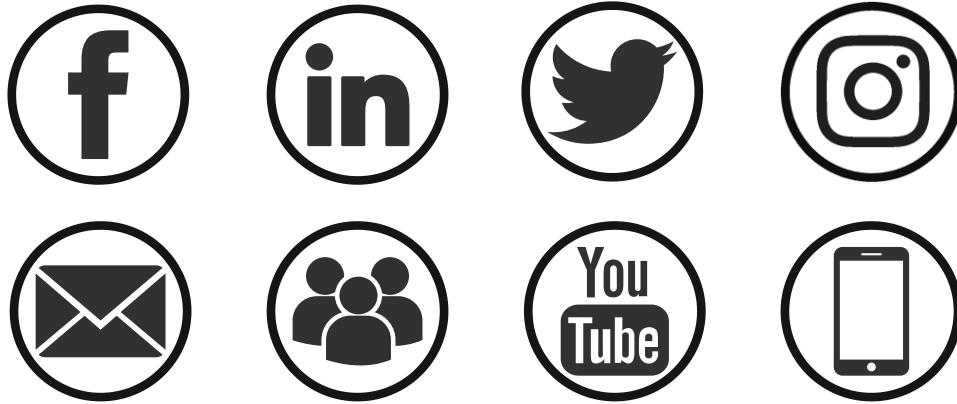
Consulting services for
the design of the data
model and the core
business processes
Installation &
Configuration of the
system
Training for key-users and
System Administrators
Agile implementation

Deployment

Trainings for end-users
Product support

Production

System health monitoring



Stay connected