



# IPS-SmartGridDI™



Data Analysis, Diagnostics and Asset Management Decision Intelligence

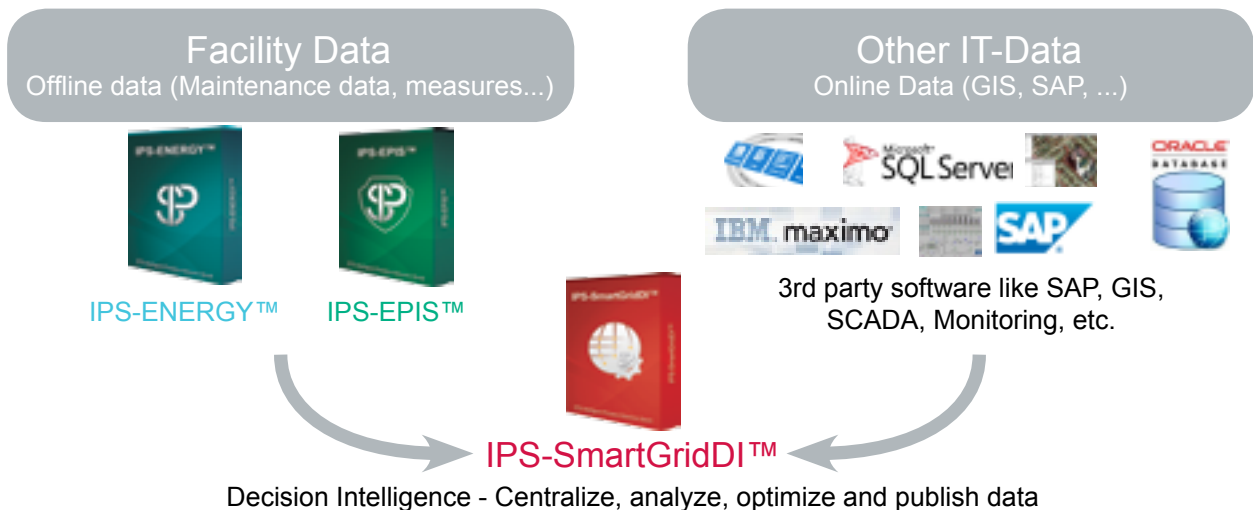
# IPS-SmartGridDI™

## Data Analysis, Diagnostics and Asset Management Decision Intelligence

IPS-SmartGridDI™ integrates all IPS-Enterprise Asset Management parts together and offers advanced analysis and information management in helping Asset Management Decision Intelligence. This solution can be integrated as a modular or standalone solution available in the following editions:

### Sales Package Overview:

-  **IPS-SmartGrid™ Core**  
 Universal Interfacing and Data Intelligence
-  **IPS-SmartGrid™ Executive**  
 Data Analytics and Asset Health Diagnostic
-  **IPS-SmartGrid™ Enterprise**  
 Information Intelligence Publishing and Presentation





## IPS-SmartGridDI™ Core

Universal Interfacing and Data Intelligence

# IPS-SmartGridDI™ Core

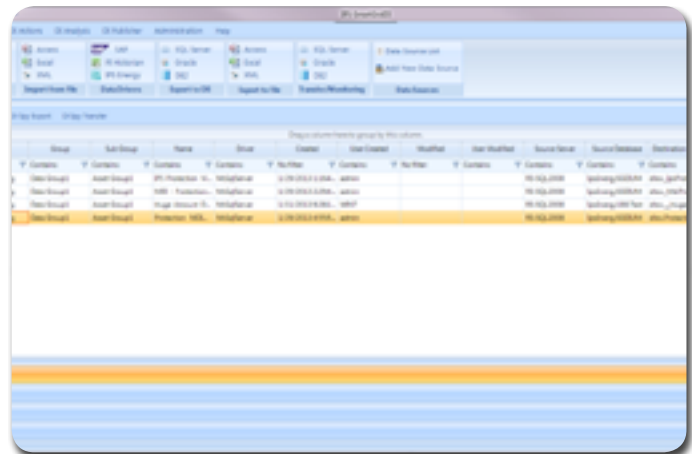
IPS-SmartGridDI™ Core is your access to our comprehensive Technical Data Intelligence and Integration System. With this advanced package you always have your data in sight or you will be notified when some data are critical or have changed. Capturing data and central conditional actions are the main tasks of IPS-SmartGridDI™ Core Edition.

Included Module Groups:

- DI-SPY™
- DI-ACTIONS
- DI-Administration

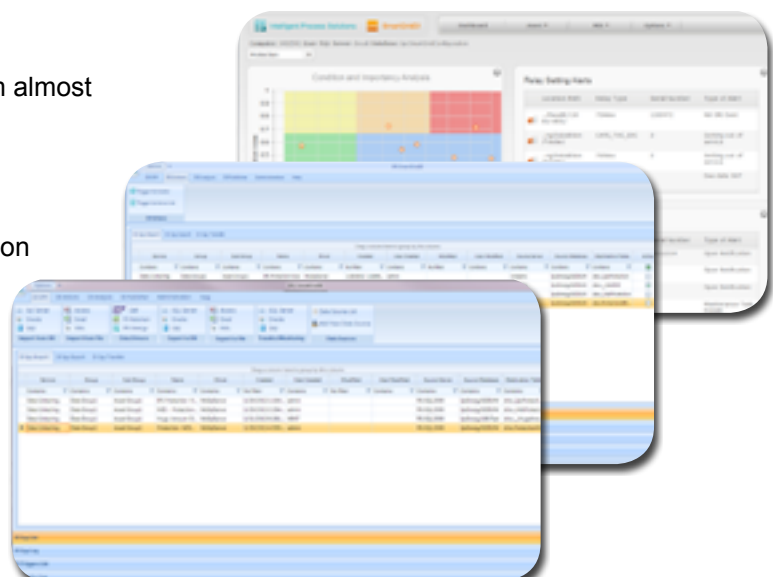
IPS-SmartGridDI™ Core Edition includes the following functionalities:

- Configurable integration tool
- Import, export, monitor, transfer your data from almost any data source
- Already built-in interfaces to various standard data sources
- Already built-in actions to generate various triggers like email notifications, automatic import / export, etc.
- Conditional actions configurator
- Built-in data drivers for standard data bases
- SQL-Server IPS-SmartGridDI™ data base



IPS-SmartGridDI™ Core HIGHLIGHTS:

- Configurable import, export, monitor or transfer data from almost every open data source like
  - SCADA, GIS, ERP (MAXIMO, SAP),
  - Monitoring Systems, SQL-Server,
  - Oracle, DB2, Ventyx, etc.
- Generate various actions depending on your data condition
- Use many built-in conditional actions like
  - alerts (desktop, web, ...),
  - auto sending email,
  - export to Excel, CSV, SML,
  - execute analysis, file copy,
  - execute SQL commands,
  - generate work orders and notifications,
  - execute stored procedure, import / export data,
  - scheduling of reports
  - etc.







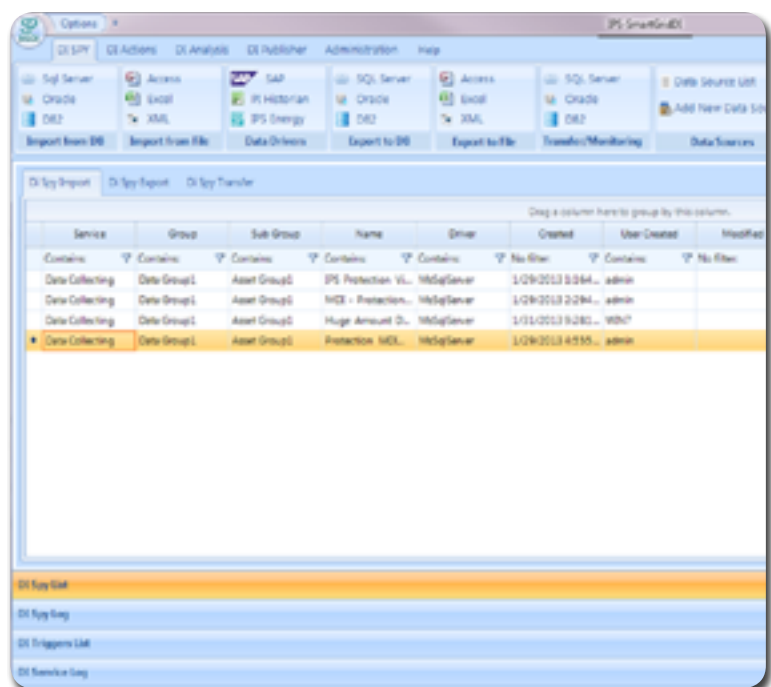
# IPS-SmartGridDI™ Core

Universal Interfacing and Data Intelligence

## IPS-SmartGridDI™ Core | Included Module Groups

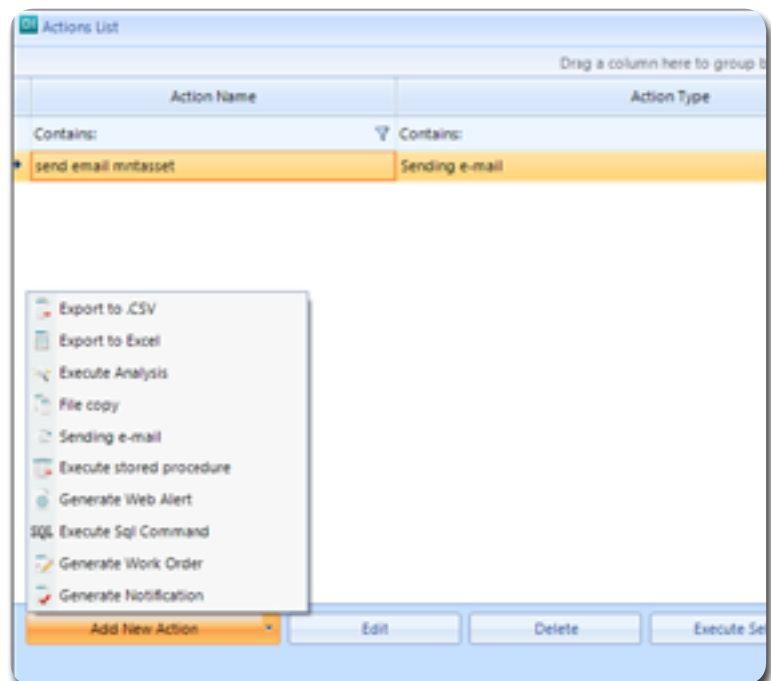
### IPS-DI-SPY™

- Configurable import, export, monitor, transfer your data from almost any open source
- Already built-in interfaces to almost any data source:
  - SAP
  - ORACLE
  - SQL-Server
  - MS-Excel
  - MS-Access
  - FLAT-file (xml, txt, csv, etc.)
  - MAXIMO
- Scheduled import
- Conditional import



### IPS-DI-ACTIONS™

- Already built-in conditional actions to generate various triggers like :
  - Defined triggers
  - Email notifications
  - Automatic import / export
  - Generate automatic alerts (web, desktop, etc.)
  - Auto sending emails
  - Export to MS Excel, csv, xml, etc.
  - File copy
  - Generate work orders in IPS or ERP
  - Generate notifications
  - Execute stored procedure
  - Import / export data
  - Generate work request





## IPS-SmartGridDI™ Executive

Data Analytics and Asset Health Diagnostic  
Central Enterprise Asset Management Analytics

# IPS-SmartGridDI™ Executive

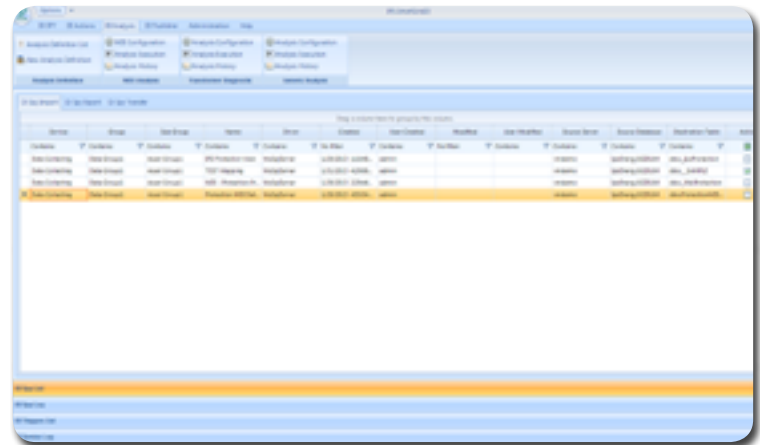
IPS-SmartGridDI™ Executive is an update to IPS-SmartGridDI™ Core Edition and provides the additional advanced IPS-DI-ANALYSIS™ module group. With this module group it is possible to make automatic analysis of your (technical- and/or asset-) data and to execute health diagnostics of your assets - specialized analytics for Electrical Power System Assets.

Included Module Groups:

- DI-SPY™
- DI-ACTIONS™
- DI-ANALYSIS™
- DI-Administration

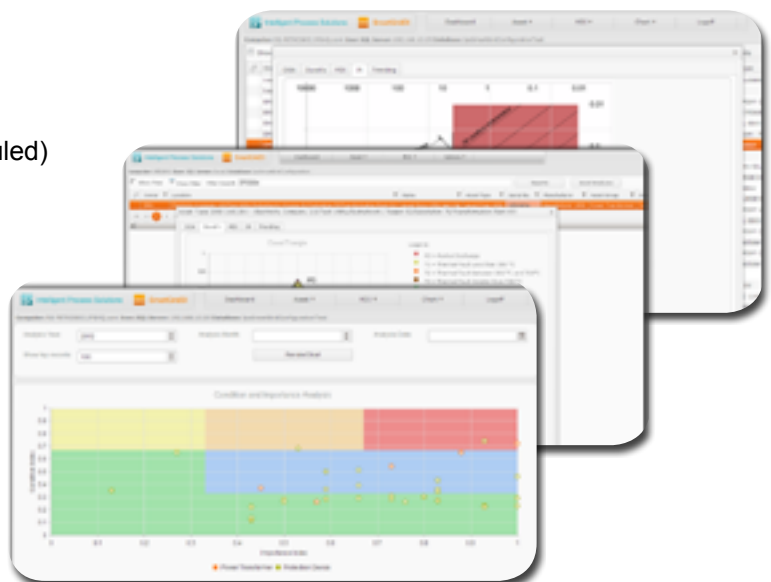
IPS-SmartGridDI™ Executive Edition offers solutions for:

- Asset Management Decision support
- Built-in analysis for Power System Assets
- Risk management analysis
- Condition vs. importance analysis
- Automatic analysis of your technical data
- Automatic execution of standard and complex analysis
- Fast diagnostic of your assets with easy to understand results
- Customized data analysis
- Customized asset diagnostics
- Trend analyses
- Transformer diagnostics with DGA, CPA, electrical test, TG Delta, etc. analysis



IPS-SmartGridDI™ Executive HIGHLIGHTS:

- Built-in asset decision intelligence
- Central analysis for Enterprise Asset Management
- Start reliable analysis of your data (on demand or scheduled)
- Reporting of your assets and life-cycle calculation with just one mouse-click
- Execute complex diagnostics of an asset or of more than one at the same time
- Use simple or complex mathematic methods of diagnostics or create your own diagnostic algorithm within our user-friendly GUI
- Set required parameters for your analysis or choose IPS-delivered analysis methods
- DGA, MDI, Duval-Method and many more are already included and ready to use
- Built-in advanced transformer diagnostics
- Built-in condition / importance diagnostics







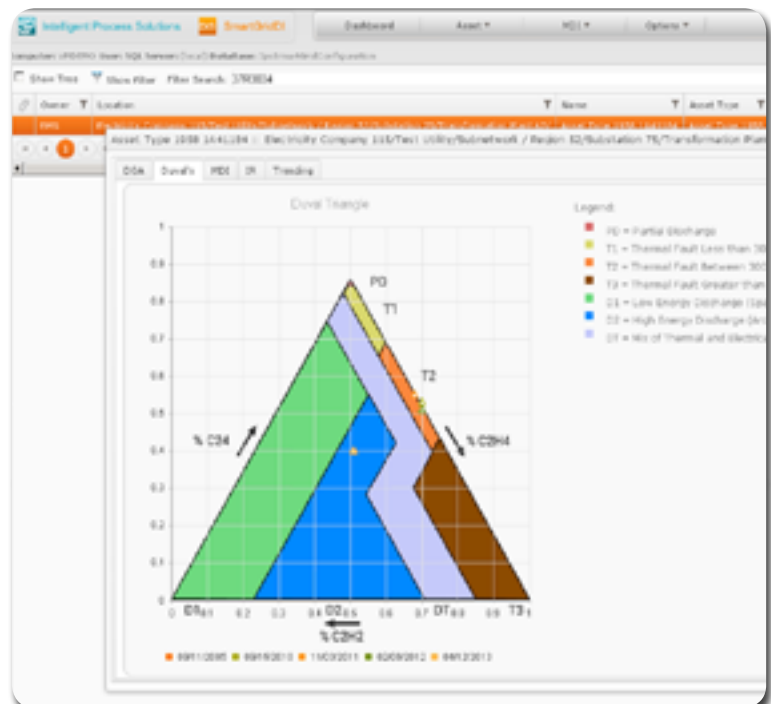
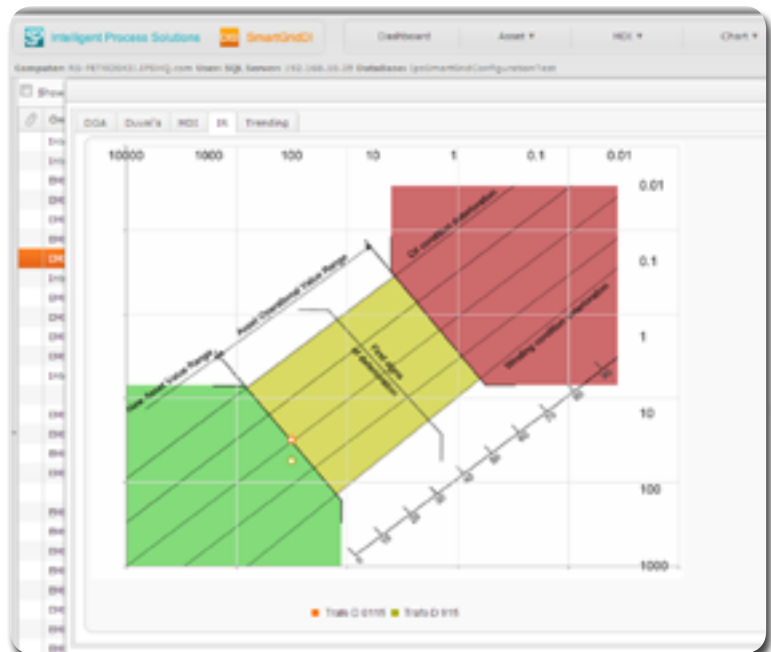
# IPS-SmartGridDI™ Executive

Data Analytics and Asset Health Diagnostic  
Central Enterprise Asset Management Analytics

## IPS-SmartGridDI™ Executive | Included Module Groups

### DI-ANALYSIS™

- Central analysis for Enterprise Asset Management
- Configure your own analysis type or use many different analysis methods for one or only some selected assets
- Execute fast and reliable analysis and diagnostics of your (technical) data
- Use predefined or customized analysis and diagnostics for your assets
- Create asset groups to analyze them with the same or different methods with just one mouse-click
- Report the results of analysis and diagnostic permanently
- Paperless asset life cycle calculation
- Reliable information through the comparison of different analysis and diagnostic methods for just the same asset or asset group
- Automatic background analysis
- Notification on bad results
- Asset trend analysis
- Advanced transformer diagnostic with built-in analysis:
  - DGA
  - Duval
  - Dörnemburg
  - IEEE
  - IEC GAS
  - Roger
  - MSS
  - CPA
  - Furon
  - Electrical tests:
    - TGD
    - Resistance
    - FRA





# IPS-SmartGridDI™ Enterprise

Information Intelligence Publishing and Presentation  
Enterprise Asset Management Decision Intelligence

# IPS-SmartGridDI™ Enterprise

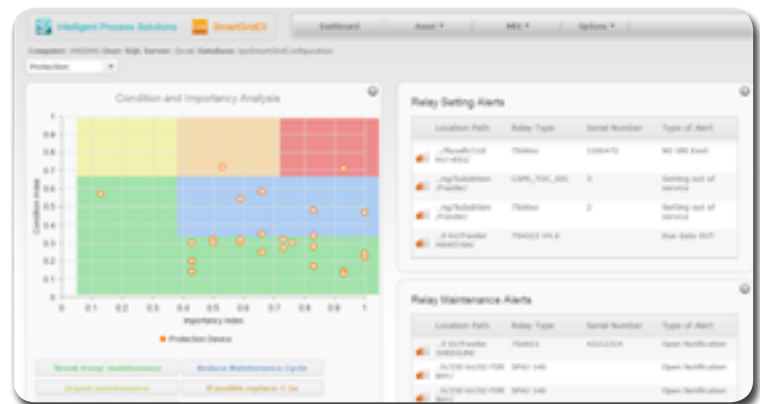
IPS-SmartGridDI™ Enterprise is an upgrade to IPS-SmartGridDI™ Executive Edition. With IPS-SmartGridDI™ Enterprise Edition you get an advanced configurable publisher to have all your monitored data, actions and analysis at a glance. IPS-SmartGridDI™ Enterprise is a fundamental part of IPS-Enterprise Asset Management Solution. DI-PUBLISHER™ is also available as DI-PUBLISHER™ LIGHT (Dashboard without Analysis-panels).

Included Module Groups:

- DI-SPY™
- DI-ACTIONS™
- DI-ANALYSIS™
- DI-PUBLISHER™
- DI-Administration

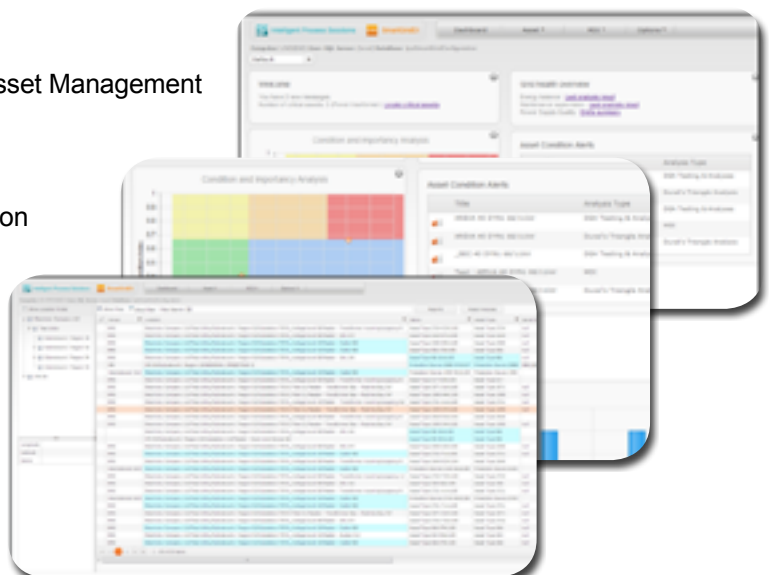
IPS-SmartGridDI™ Enterprise includes the following solutions:

- Configurable web-based Publisher
- Advanced data publisher for IPS-SmartGridDI™
- Customized information of all requested or critical data
- Multi-platform data overview at a glance
- Critical data overview in real time
- Help decision makers - Decision Intelligence
- Data publishing whenever or wherever you want
- User dependent dashboards, e.g. CEO cockpit
- Presenting of advanced analysis
- Chart-, diagram-, result-tables
- View reports from IPS-ENERGY™ via Web



IPS-SmartGridDI™ Enterprise HIGHLIGHTS:

- Standalone or as part of IPS-SYSTEMS™ to Enterprise Asset Management
- Built-in web-based information panels (Dashboards)
- Customizable dashboard with all relevant data
- Observe data characteristics and analysis results
- Make the right decision through having the right information
- See the life-cycle of your assets in real time
- All critical data and assets on just one screen
- See only the data you need with predefined views
- Use your personal dashboard wherever and whenever you need it - platform independent
- Get notifications when one of your important data has changed
- DI-PUBLISHER™ also available as DI-PUBLISHER™ LIGHT™ (Dashboard without Analysis-panels)







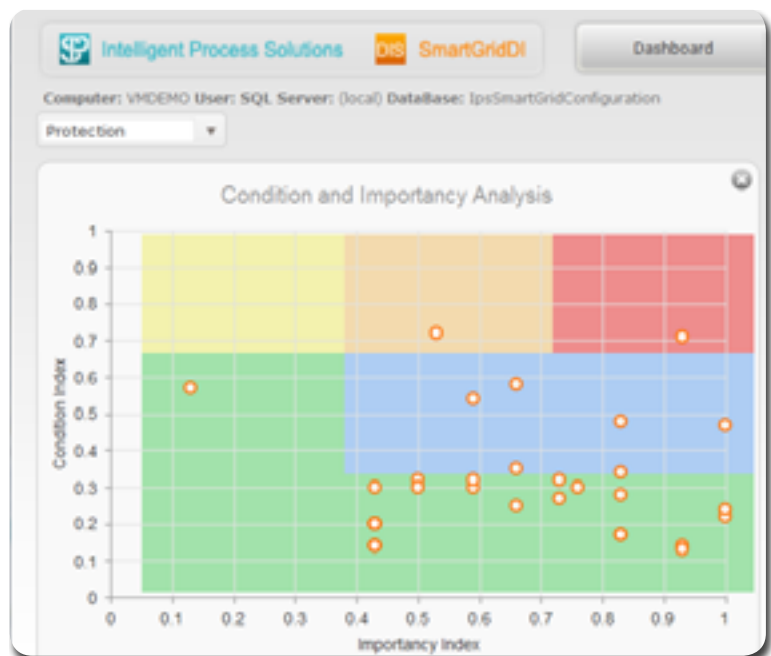
# IPS-SmartGridDI™ Enterprise

Information Intelligence Publishing and Presentation  
Enterprise Asset Management Decision Intelligence

## IPS-SmartGridDI™ Enterprise | Included Module Groups

### DI-PUBLISHER™

- Configure your own dashboard with all your desired data
- Exclude data which are not of interest for you
- Predefine notification, e.g. to get an email when critical data has changed
- See diagnostic and analysis results in real-time
- Platform independent - on desktop, laptop, mobile and tablet
- Publish your data by email to other decision makers
- Sort your data by using different dashboard i.e. for protection data, asset data, etc.
- See all of your critical relay settings or upcoming maintenance actions
- Configure your own data dashboards
- Publisher is visualizing help for asset management decision
- Use predefined portlets
- Get specified reports in simple lists



#### Relay Setting Alerts

| Location Path           | Relay Type   | Serial Number | Type of Alert          |
|-------------------------|--------------|---------------|------------------------|
| ../Riyadh/110 kV/#E01/  | 7SA6xx       | 1265472       | NO SRI Exist           |
| ../ng/Substion /Feeder/ | CAPE_TOC_IOC | 3             | Setting out of service |
| ../ng/Substion /Feeder/ | 7SA6xx       | 2             | Setting out of service |
| ../0 kv/Feeder HAWTYAH/ | 7SAS22 V4.6  |               | Due date OUT           |

#### Relay Maintenance Alerts

| Location Path                    | Relay Type | Serial Number | Type of Alert     |
|----------------------------------|------------|---------------|-------------------|
| ../0 kv/Feeder SHEDGUM/          | 7SA611     | 43212314      | Open Notification |
| ../h/230 kv/02 FDR SPAJ 140 BAY/ | SPAJ 140   |               | Open Notification |
| ../h/230 kv/02 FDR SPAJ 140      | SPAJ 140   |               | Open Notification |