NAPCON ANALYTICS

NAPCON Analytics enable you to unleash the vast ocean of your production data for operational intelligence to achieve economical excellence.

NAPCON UNDERSTAND

- **NAPCON INFORMER**
- **NAPCON ANALYTICS**

CERTIFIED FOR COMPLIANCE V+
OPC FOUNDATION

NAPCON ANALYTICS IS

THE LINK BETWEEN DATA AND REAL KNOWLEDGE.

NAPCON Analytics turns your plant data to easily understandable KPI's and forms the brains for Operational Intelligence to help you predict the real-life consequences of your operations

NAPCON ANALYTICS MAIN BENEFITS

INTELLIGENCE

NAPCON Analytics releases the full benefits of Operational Intelligence for you with pleasant dashboards ready for real time and future predictions.

EXPERTISE

We offer in-depth process industry knowledge for building operational intelligence solutions with KPI visualizations, process phenomena predictions and lots more.

UNDERSTANDABILITY

NAPCON Analytics provides personalized, coherent real time view for plant's operational process information and KPI's.
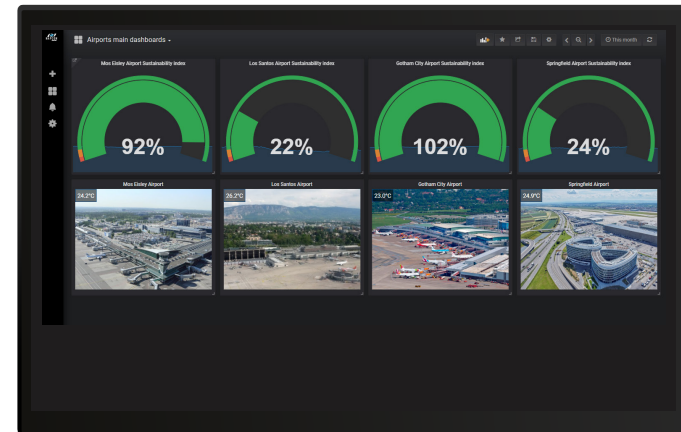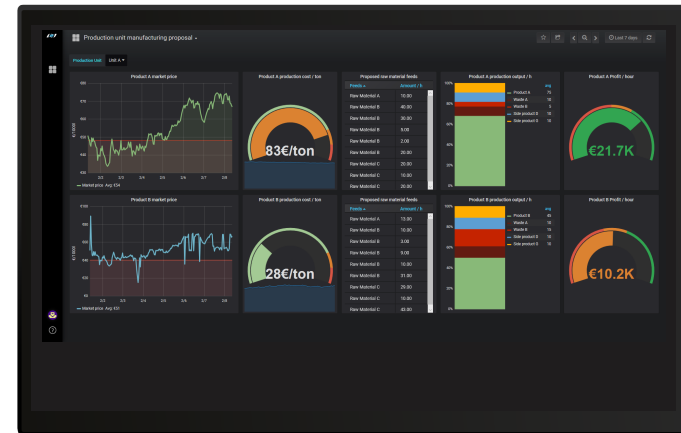
RELIABILITY

Our solid experience of industrial data reconciliation and calculation models for process optimization are fully at your service.

CUSTOMIZABLE

We are specialized to provide ready-for-use customizable solutions to boost process economy to most demanding customer challenges.

INDUSTRIAL SOLUTION

NAPCON Analytics is built for process industry needs with easy integration to process data solutions and seamless reporting tools with audit trails

COMPATIBILITY

NAPCON Analytics expands your existing systems and easily connects to any DCS, SCADA, APC, MOM, MES, ERP and a wide range of visualization and reporting systems.

INTELLIGENCE

Ground your Operational Intelligence to NAPCON Analytics real time capabilities and expand existing business intelligence systems with streaming operational KPI's.

DIVERSITY

Intuitive modular packages for different needs: Analytics Core with Dashboards and extensions for Reporting, Online calculations and Advanced calculations for data

CALCULATIONS

Advanced calculations with full Python plus wide range of industry specific calculation packages extensions, such as energy efficiency calculations, product property predictions and exact energy and mass balance calculations.

SAFETY

Continuous verification and validity checking for process data including features such as recalculation when missing data points are re-entered.

DATA RECONCILIATION

Advanced signal conditioning by using data reconciliation to guarantee correct measurement and proper actions.

SOFT SENSORS

Take advantage of non-measurable online parameters from streaming data to mimic measurements for example in continuous emission monitoring system (CEMS) or energy emission systems.
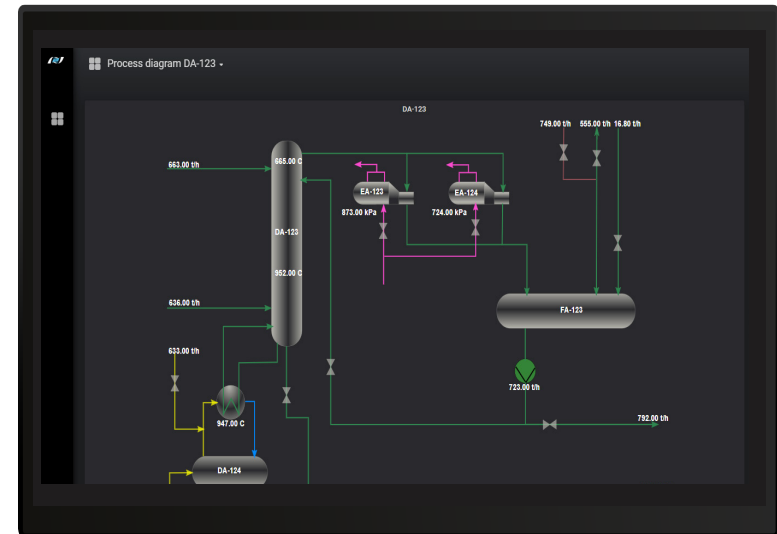
MAIN PROPERTIES

NAPCON Analytics is built to leverage operational intelligence for process industries and turn streaming data to multi-level operational metrics & KPI's for daily and yearly plant profit optimization. With turn-key delivery we help to define, generate and deploy production-ready dashboards and predictive ML solutions which help to maximize human potential.

- Excellent Analytics tools for industrial reporting, data visualization and analysis, predictive analytics and maintenance, based on Python and Pandas & NumPy calculation packages which guarantees interoperability and extendability with NAPCON Analytics

- Numerous visualization options to help you understand your plant via it's data: Line chart, Bar chart, Histogram, Pie chart, Single number and Scatterplot within sharable dashboards and easily arrangeable panels
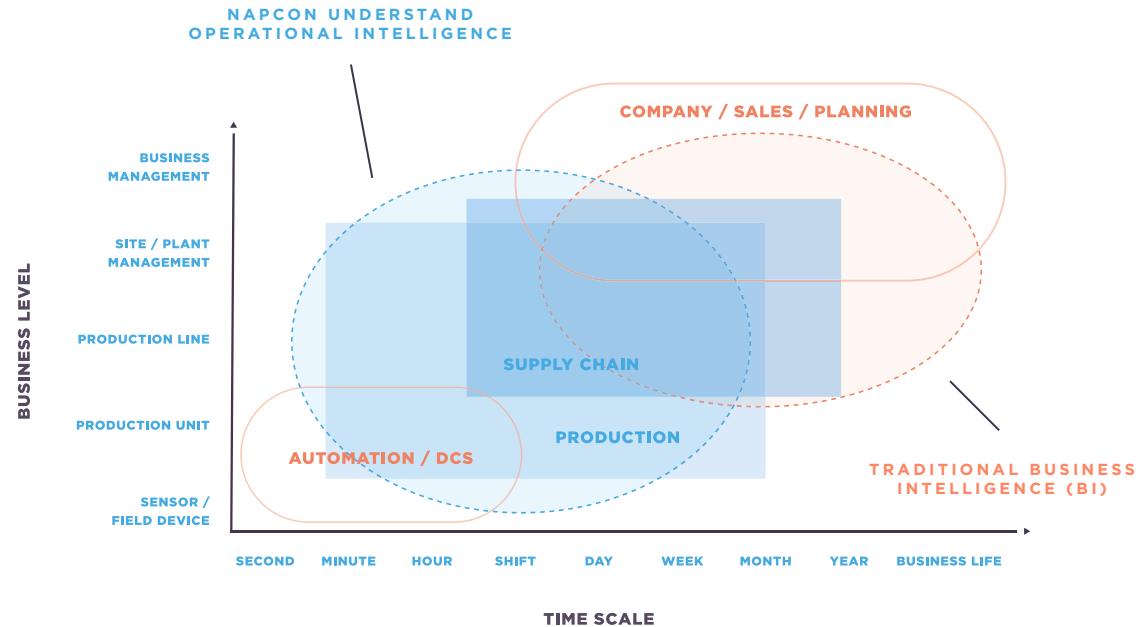
PRODUCTION TRACKING
CASE EXAMPLE

Customer driven requirements and supply chain optimization direct production optimization to cover entire production chain. For that, reliable and scalable data platform with IoT and Edge enabled Analytics is a must as well as easily modifiable analytics solution connected to ERP and other systems. With NAPCON Analytics it's easy to build production tracking system based on your existing operational information platform or using flexible NAPCON Informer to build customized information platform.

Collaborative knowledge-driven decision-making in the supply chain, networked production assets and the whole value chain is the center of the future production optimization. Analytics Dashboards and Alarms excels where flexible event-driven reaction and prediction on changes in factory environment, resource allocation, scheduling, optimization and controlling in real time is needed.
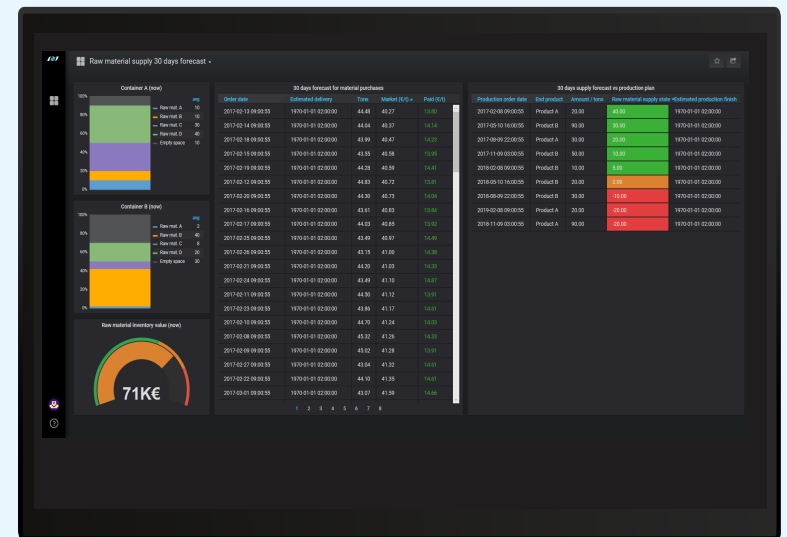
ENERGY EFFICIENCY REPORTING
CASE EXAMPLE

Reliable reporting is a must for most industries because of regulatory requirements and getting regulated taxation reductions. Showing ecological leadership to customers in terms of climate emission reduction or production sustainability is also rising fast among industries. Easy and assured reporting based on data reconciliation with modifiable precalculations, easy review with fine adjustment and timed delivery to required receivers are key features that keep an eye on right things and frees valuable time for more productive work.

Analytics has new integrated state-of-the-art reporting feature which is designed especially for process industry and energy reporting purposes. It's built on the latest technology with responsive GUI and available Python calculation libraries.

Reports can be shared as links to Analytics Dashboards or automatically via email (pdf). Reports can be extracted to excel or csv formats for further processing needs. Reports are accessible anywhere where you have internet access with PC, laptop, tablets and smartphones.
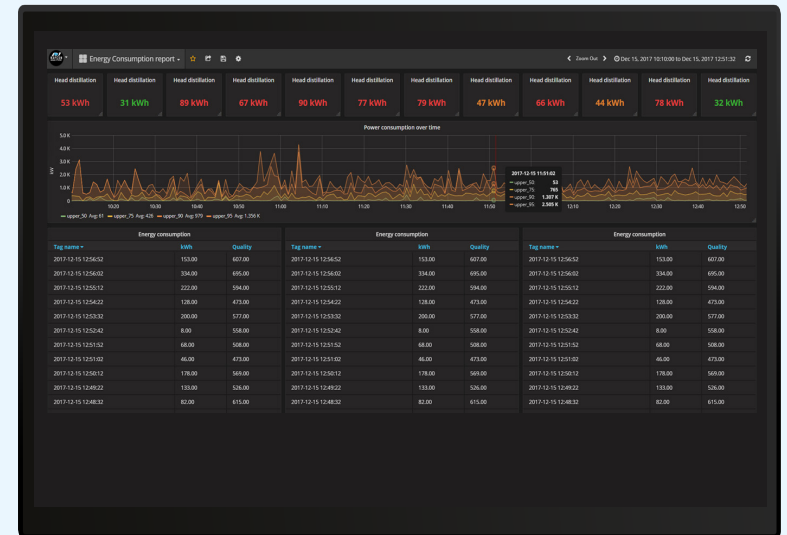
PREDICTIVE MAINTENANCE
CASE EXAMPLE

Every production asset has lots of wearing actuators and equipment. Being able to reliably estimate wearing patterns and getting early warnings of potentially damaging devices outside of DCS is very valuable as typically automation alarms are set close to locking levels.

Possibility to avoid unpredictable shutdown caused by automation locking or even equipment breakage is hereby economically very feasible way to save money as optimized maintenance.

Analytics limitless calculation capabilities brings predictive maintenance to service contractors phone and pocket and makes them always conscious of plants and equipment maintenance state and needs.
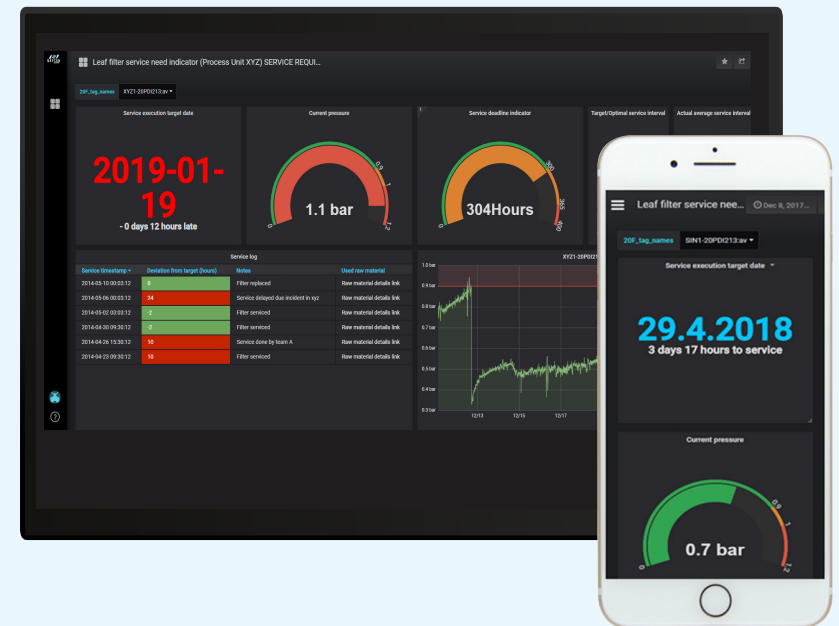
USABILITY AND CONFIGURATION

- Accelerate digitalization, data driven culture and reach the economical targets by shareable, tailored dashboards available for every terminal (PC, tablet, smartphone).

- Easily turn your multiple plants streaming data into a unified, understandable metrics and KPI's to predict the real-life consequences of your daily operations

- Use any connected data sources for building dashboards and reports for industrial reporting needs

- Refine actionable know how from your plant operational data securely in on-premises, cloud or hybrid cloud environments

- Intuitive and responsive user interface for monitoring your multi-site operation information anywhere, with any device

- Excellent user experience based on latest technology development from open source software

- Evaluates and predicts immeasurable process operating key values with continuous validity checking for model inputs

- Easily configurable dashboards and panels for different visualization purposes, versatile precalculations for reporting and base for different visualization purposes. Representation of data based on several target groups based on their information needs.

- User- and access management and user grouping makes it easy to fulfill needs of different user groups with existing AD groups. Tie AD groups to Analytics and automate real-time operational view sharing for different user groups. With user grouping, every person has instant access to essential information targeted especially for them to maximize potential to operate with daily tasks optimally.
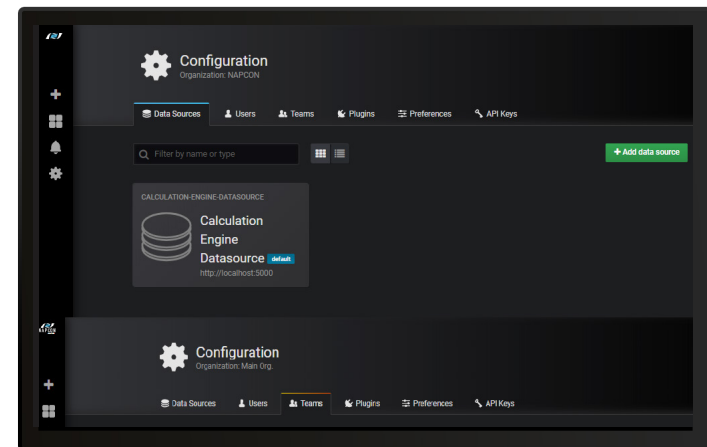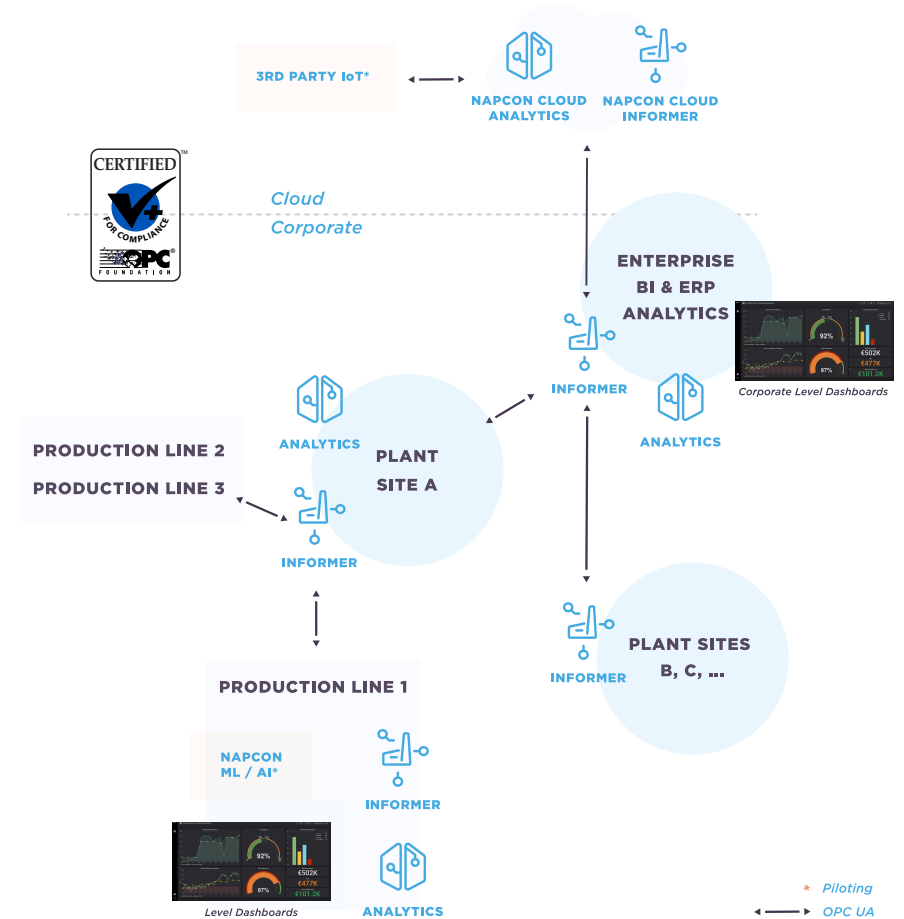
TECHNOLOGY

Calculation frameworks for analytics purposes

- Simple calculation for fast visualizations and reporting needs: Addition, subtraction, multiplication, division of tag data streams

- Advanced calculations: Any Python code snippet with integrated Pandas and Numpy libraries make possible to use data science projects results directly for generating production estimates, reports, visualizations or maintenance need estimation

- Online calculations: New easy and intuitive tool for defining and executing time critical cyclical online calculations with definable execution order within one calculation service, especially designed for APC needs

- Create calculations for static historian and streaming online operational/process data and use results to gain your operational awareness.

- Python, Pandas and NumPy packages fully integrated for advanced analytics and process data calculations

- Easily configurable reporting calculations for scheduled reporting

- Integration for real time applications and rigorous identified models with NAPCON Analytics extension packages (quality control/)

- Support for time-independent calculation, OPC UA hierarchies and information models leveraged by advanced queries

- Versatile data queries for selecting variables for calculations from data sources for calculations: Simple and Advanced Queries

- Windows Server 2016 support, Optimized Hyper-V containers, Windows Azure

COMMUNICATION

- OPC UA Client for secure and fast configurable data access

- Several preconfigured data access plugins for different data sources

- Export of data to shareable reports or csv's for further usage

- Connections to any DCS, SCADA, MODBUS, APC, MOM, MES, ERP with OPC / OPC UA or common file transfer based communication

- Wide range of security features: OPC UA based cyber security and safety logic for transferring calculation results to other systems

- Seamless integration to other NAPCON applications for utilizing intelligence from machine learning, soft sensors and other streaming data based estimations for enhanced process control

- Runs on NAPCON Informer platform offering wide variety of process information management services

- REST API & Web services for 3rd party applications, csv data export

- JSON-communication with web-based User Interface (newer versions of Chrome, Safari, Firefox)

3RD PARTY IoT*

NAPCON CLOUD ANALYTICS

NAPCON CLOUD INFORMER

CERTIFIED™ FOR COMPLIANCE OPC® FOUNDATION

Cloud Corporate

ENTERPRISE BI & ERP ANALYTICS

Corporate Level Dashboards

INFORMER

PRODUCTION LINE 2

PRODUCTION LINE 3

ANALYTICS

PLANT SITE A

ANALYTICS

INFORMER

PLANT SITES B, C, ...

INFORMER

PRODUCTION LINE 1

NAPCON ML / AI*

INFORMER

Level Dashboards

ANALYTICS

*   *Piloting*

OPC UA

EASY START WITH NAPCON ANALYTICS SOLUTIONS

Analytics consist of Core and extension tool packages for various needs which can als be updated later when requirements changes or expands. Existing packages are online calculations, Reporting and Advance calculations with Python code support. Upcoming extensions include ML Framework for machine learning use cases.

Easy start with NAPCON Analytics Solutions:

- NAPCON Analytics Lean Pilot project with core functionality and fast agile project. Setup one month, trial period two months.

- Collect experience with trial period usage

- Decision of continuity after trial: continue, expand or fail fast

- Scale and expand Analytics to other operations and functionalities with extension packages

- Key values with continuous validity checking for model inputs

- Versatility and streaming data capabilities makes NAPCON Analytics optimum choice for process industries. Customer can buy only needed packages which helps them to gain operational advantages and modify installation easily later when situation transforms. Analytics can be utilized to gain data form different sources and for different purposes both offline and online solutions. Data communication is already now future compliant and vendor independent by OPC UA and fully leveraged with NAPCON Informer data links.

- Analytics is Installable On-Premises, cloud or hybrid installations without risking security. Integrated OPC UA and user authentication fulfills needs of office, operational field or mobile users. All user/access management and user groupings make it easy to fulfill needs of different user groups within existing AD groups. Tie AD groups to Analytics and share operational views easily for different user groups.

- Future benefit is guaranteed by continuous development, heavy utilization of most advanced open source solutions and upcoming machine learning capabilities which can be taken into action by Analytics extension package. With future releases, customer can take turnkey benefits from machine learning by complete solution delivery project or start making their own ml voyage by using ML framework tools (in pilot use) for data gathering and preparation, model selection and creation and model production deployment.

UNDERSTAND

NAPCON Understand solutions will turn the data provided by your plant into relevant information that helps to optimize your company's production.

NAPCON Informer
NAPCON Analytics

IMPROVE

NAPCON Improve solutions will bring out the maximum potential of your operations and helps you to ensure that your investments meet your strategic goals.

NAPCON Controller
NAPCON Optimizer
NAPCON Business Optimizer

TRAIN

NAPCON Train solutions will bring the real life plant into the virtual world, making training operators and testing the limits of your plant safe and exciting.

NAPCON Simulator
NAPCON Games

NAPCON