



# NAPCON UNDERSTAND

NAPCON Understand solutions enable you to dig deeper into the vast sea of data generated by your plant. Build your own Smart Refinery with NAPCON!

## NAPCON UNDERSTAND

- NAPCON INFORMER
- NAPCON ANALYTICS



## NAPCON UNDERSTAND

Do you want to know what's going on in your production right now? Are you searching solutions for IIoT, data gathering to cloud or operational intelligence? Do you have piles of existing production data but utilizing it seems complex? If yes, NAPCON has state-of-the-art, vendor independent solutions for you!

NAPCON Purpose is to lead process industries to a safe and sustainable future. To achieve a carbon neutral future that protects also biodiversity, industries must target to close the material cycles and enable carbon and raw material circulation, change to renewable energy and raw materials. For successful business adoption these new business models need vast support from digitalization to make the transition smooth and cost efficient.

Industry 4.0 is about how to concretely transform industrial operations with digitalization to respond to most urgent challenges like climate change and biodiversity crisis. Industry 4.0 technologies include the industrial IoT, simulation, optimization, analytics, digital twins and ML/AI. Industry 4.0 is driven by a need to boost efficiency, agility, and to enable abovementioned new business models to sustainably mitigate challenges in the process industry with future smart factories.

NAPCON Understand solutions are built to leverage Industry 4.0 era IIoT with operational intelligence to assist decision making in process industries in contexts where data exists or is available but is not put into full-scale service yet. Cyber secure with certified OPC UA connectivity.

- **NAPCON INFORMER** with data acquisition and cyber secure cloud connectivity enables your plants digitalization leap. Take full use of existing data from IIoT, DCS, laboratory (LIMS) and other systems with Industry 4.0 compatible, future-proof OPC UA communication.
- **NAPCON ANALYTICS** gives your teams and decision makers perceptive overall view to production assets performance - in real time. Whatever you need: KPI Dashboards, reliable reporting or advanced analytics for production decision support.
- **NAPCON EXPERTS** have deep understanding of process industry and its information solutions. With combination of thorough analysis, we offer customized turnkey deliveries without production interruptions.



## NAPCON UNDERSTAND PORTFOLIO

### ANALYTICS



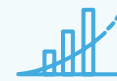
#### KPI DASHBOARDS

Help people to make insightful fact-based decisions in real time. Keep teams focused on targets. Improve situational awareness



#### INDUSTRIAL REPORTING

Advanced solutions for industrial reporting purposes. Easy report building, review and sharing. ISO50001 compatible energy reporting.



#### ADVANCED PROCESS CALCULATIONS

Qualified information based on advanced calculations needs with data validation and reconciliation.



## NAPCON UNDERSTAND



#### PRODUCTION INFORMATION PLATFORM

Build IIoT platform and solutions easily. Connect plant to cloud for analytics. Cyber securely via certified OPC UA interface.



#### CLOUD CONNECTIVITY

Connect existing OT data to Cloud cyber securely. Google and Azure connections made easy.



#### PROCESS HISTORIAN

Process data storage and sharing with certified OPC UA. Fast and trustworthy data operations for Industry 4.0

### INFORMER



## NAPCON UNDERSTAND OPERATIONAL INTELLIGENCE

Who wouldn't want to be fully aware - in real time - of what's going on at production? Real-time visibility to processes and events is essential for optimal decision making in many levels. This is what NAPCON Understand realizes for your plants, operators and supply chain decision makers. Based on real-time analytics of streaming data from various sources.

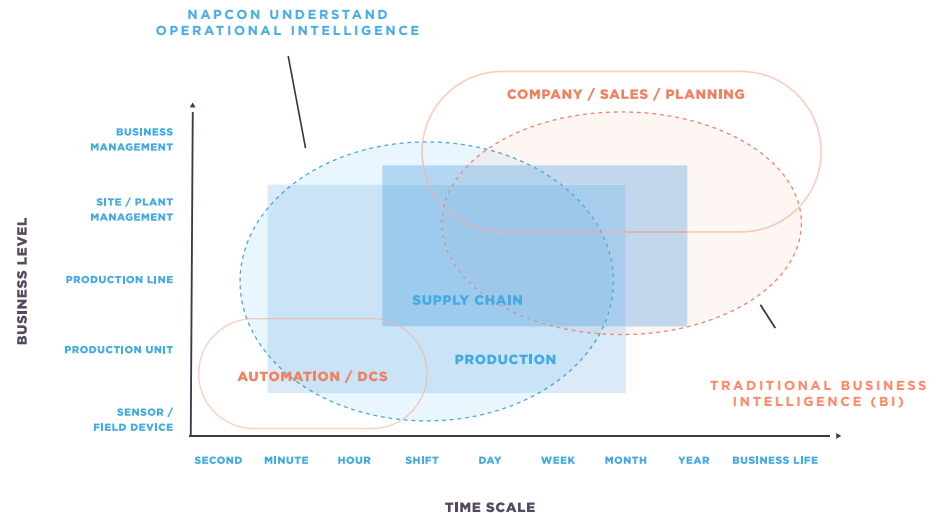
NAPCON Understand Operational Intelligence (OI) connects plant floor-level automation to Company-level Business Intelligence (BI) while serving production employees with important daily operative KPI's and predictions. It means KPI Dashboards for operators, valid reporting for management and overall production optimization for whole plant. And effortless connection to cloud for BI purposes.

Improved situational awareness improves employee performance, reduces risks at incidents and helps people to make better decisions, based on real time process information:

- Streaming data processing (onsite/cloud) and analytics for KPI Dashboards, decision making and reporting
- Cloud connectivity with cyber secure OPC UA for BI and ML/AI
- Data collection & compilation from production assets, DCS, IIoT and other sources.
- Full-stack vertical technology solution from process industry expert.

In addition, NAPCON Understand Operational Intelligence enables Machine Learning and Artificial Intelligence. Our unique NAPCON Advisor, a operator's digital assistant, guides process operators in everyday work giving process state predictions and action suggestions.

*Read more: [napconsuite.com/machine-learning-in-the-napcon-advisor/](http://napconsuite.com/machine-learning-in-the-napcon-advisor/)*



OPC UA is a Industry 4.0 data exchange standard for industrial communication and smart factory implementations. This open interface standard is independent of the manufacturer, system supplier or programming language of the application and of the operating systems. OPC UA provides access to a wide variety of data in both vertical and horizontal directions

## NAPCON INFORMER SOLUTIONS

### INDUSTRIAL IOT

NAPCON Informer realizes IIoT purpose with production information platform and OPC UA connectivity. Collect data from plants to cloud. Expand with IoT for specific use cases.

### STREAMING DATA AGGREGATOR

NAPCON Informer enables solutions on streaming data like real-time dashboards and AI with certified OPC UA connectivity from IoT, DCS, LIMS and many other systems.

### BUILT-IN FLEXIBILITY

Flexibility is the most important quality of NAPCON Informer: Use it to collect, maintain and share data between processes, assets and shareholders securely and reliably with reconciliation and validity confirmation.

### ADAPTIVE SERVANT

Informer solutions are adaptable for future industry transformations. By altering setup configurations, NAPCON Informer can act on different roles and levels inside company and assets to serve in multiple purposes.

### GAIN MORE FROM EXISTING ASSETS

Existing assets and investments on data historians are secured. With wide compatibility NAPCON Informer can modernize present implementations by connecting them to new business applications and cloud environments.



### PRODUCTION INFORMATION PLATFORM

Build IIoT Platform easily for streaming data for cloud and advanced analytics purposes. Cyber securely via OPC UA.



### CLOUD CONNECTIVITY

Connect all existing OT data cyber securely to Cloud for business intelligence purposes. Google Cloud and MS Azure connectivity made easy.



### PROCESS HISTORIAN

Advanced process data storage and sharing with OPC UA. Fast, efficient and trustworthy data operations.



### CERTIFIED BY OPC FOUNDATION

You benefit from faster setup with less need for support, proven interoperability and reliability. Get future proof Industry 4.0 era solutions whether your business is built on brownfield of greenfield plants.

## NAPCON INFORMER MAIN BENEFITS

### FLEXIBLE

NAPCON Informer allows for configurable process data collection and sharing it from any single automation system, all the way to global, multiple plant-wide information systems.

### PERFORMANCE

Our major design principle for this modern and fast information platform is the capability to handle large scale streaming data.

### SAFETY

OPC UA with attention to specific industry related requirements, latest technologies and architectures guarantees built-in cyber security.

### STANDARDIZED

NAPCON Informer accomplishes a standardized, modern and secure OPC UA interface, making it Industry 4.0 compatible with any existing modern information system like SCM, MES and ERP.

### VERIFIED

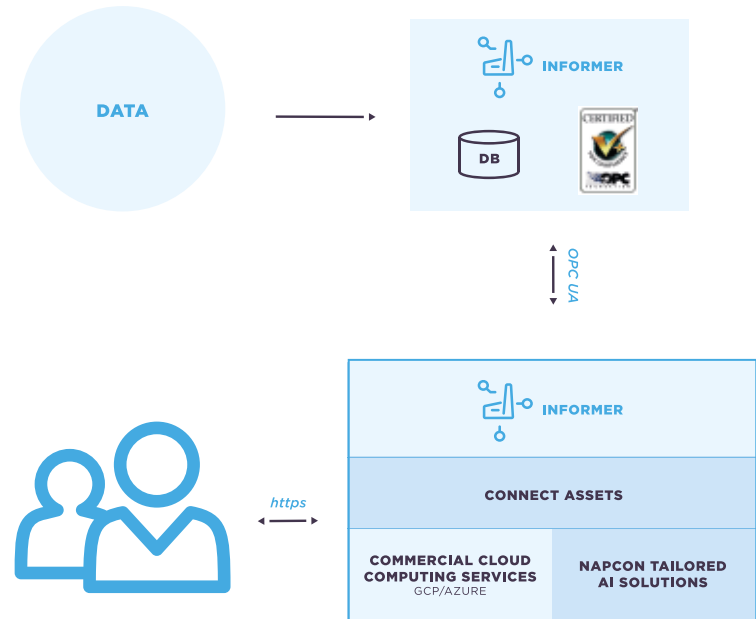
NAPCON Informer is certified by an OPC Foundation accredited Certification Lab and is ready to guide your plant data management towards the Industry 4.0 era.

### TRANSPARENCY OF INFORMATION

NAPCON Informer is reliable and scalable solution for effective access for analytics and artificial intelligence purposes.

### EXPERTISE

Your business is in good hands: with our 30 years of experience we truly understand the needs of the evolving process industry.

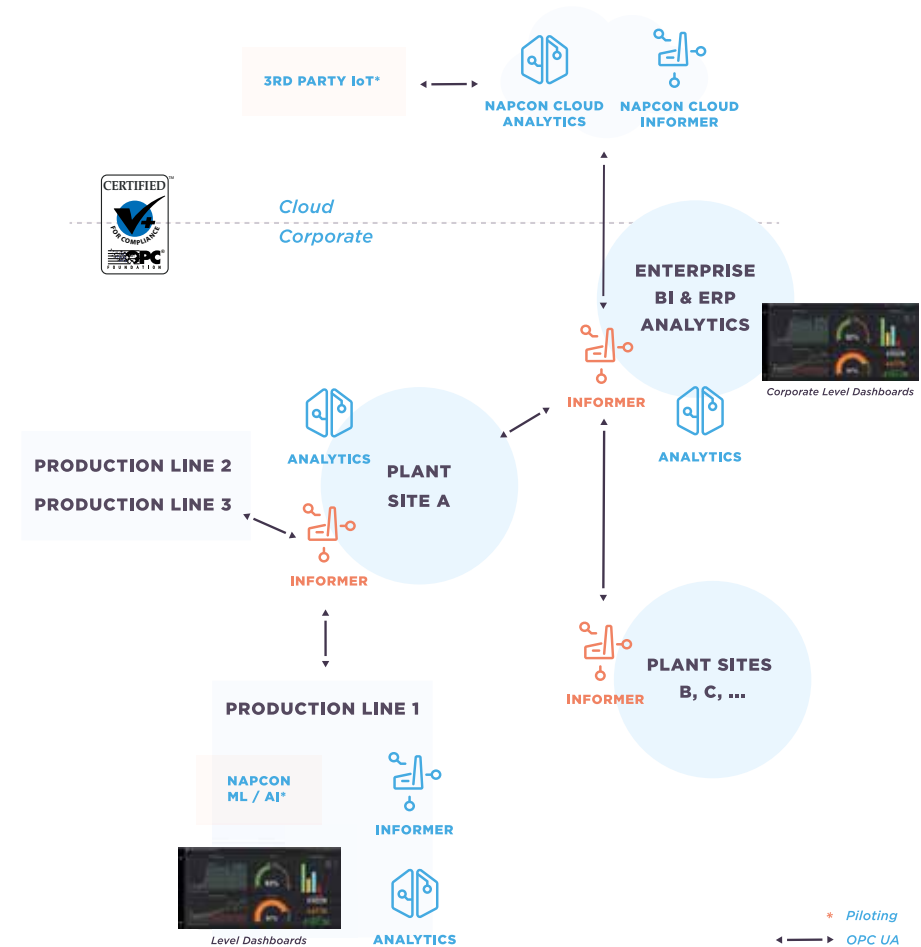


## EASY START WITH NAPCON INFORMER PLATFORM SOLUTIONS

Do you want to put your production data into use with Machine Learning enabled intelligence, but cloud connectivity seems questionable from cost, cyber security or reliability point of view? Don't worry, because NAPCON has developed industry proven solutions to enable Machine Learning and Artificial Intelligence in operation with On-Premise, Cloud and Hybrid solutions. Connect assets to commercial cloud computing services (GCP, Azure etc) or let NAPCON build tailored AI solutions.

### EASY START WITH NAPCON INFORMER SOLUTIONS TRIAL USE:

- NAPCON Informer enables turn-key delivery of streaming data solutions without production interruptions. Enjoy resilient process data access with certified OPC UA tools from IoT, process DCS and many other systems.
- Flexible and scalable OPC UA data acquisition technologies for Industry 4.0 era requirements. Global On-Premise, Cloud and Hybrid installations.
- Full Industrial IoT (IIoT) Platform with enterprise IT/OT integration, application platform for NAPCON Operational Intelligence. Built for process industry use by process industry experts.





NESTE

## NAPCON INFORMER CONNECTS NESTE PRODUCTION TO CLOUD.

Neste, world's largest producer of renewable diesel and renewable jet fuel refined from waste and residues, trusts NAPCON Production Information Platform (PIP) at all production sites globally. PIP integrates different production data from Neste's oil and renewable refineries and transfers it securely with Pub/Sub to Neste cloud environment for BI purposes. Central element of PIP at each refinery is NAPCON Informer which collects up to 100k tags per site.

For more info of Informer and PIP technologies, see NAPCON Informer brochure (pages 6 and 7). PIP is also as backbone for on-site smart refinery solutions like NAPCON KPI Dashboards (see NAPCON Analytics brochure pages

*"NAPCON Informer has proven its speed, reliability and flexibility in practice as we are building Neste production digitalization. The same applies to NAPCON experts. Their strong knowledge of the process industry is evident in effortless collaboration"*

Kari Koivisto, Manager, Systems Development, Neste Oy



## NAPCON ANALYTICS SOLUTIONS

### OPERATIONAL INTELLIGENCE

NAPCON Analytics is built to leverage operational intelligence to process industries. Refine streaming process data to usable knowledge for plant profit optimization.

### TURN KEY DELIVERY

We help to define, generate and deploy production-ready KPI dashboards and ML solutions which help you to maximize everyday human potential.

### NAPCON ANALYTICS PACKAGES

Analytics offers packages for various needs and can be extended later on when requirements changes. Existing packages are Online Calculations, Reporting and Advanced calculations with Python code support. Upcoming extensions include e.g. ML Framework for machine learning use cases and AI solutions.

### ADVANCED CALCULATIONS

Analytics has calculation options for all process industry needs. Also data reconciliation and verification are possible. The most advanced option is full Python script support which enable machine learning and artificial intelligence solutions. New ML Framework makes it easy to deploy ML models like soft sensors to production.

*"While many analytics solutions are available, not all are capable of dealing with the complex nature of oil and gas operations"*

Michael Guilfoyle, ARC Group 2018, <https://www.arcweb.com/ja/node/69056>



### KPI DASHBOARDS

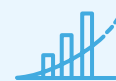


Make insightful fact-based decisions in real time. Keep teams focused on targets. Improve situational awareness.



### INDUSTRIAL REPORTING

Advanced reporting for industrial purposes. Easy report building, review and sharing. ISO50001 compatible energy reporting.



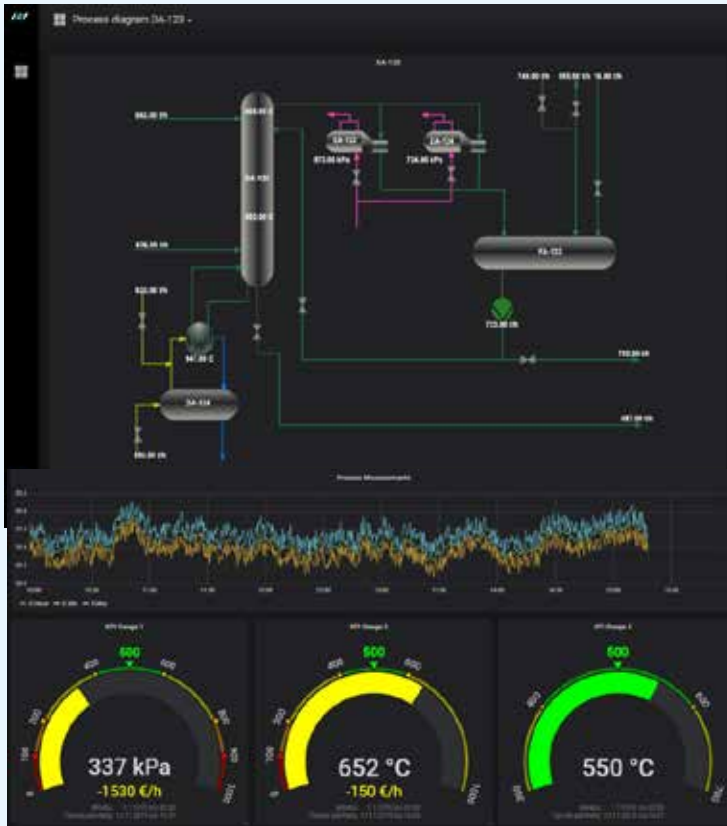
### ADVANCED PROCESS CALCULATIONS

Qualified information based on advanced calculations with data validation and reconciliation.



### ENERGY EFFICIENCY REPORTING

ISO 50001 compliant reporting solutions together with Neste Engineering Solutions Energy Efficiency



### ADVANCED ANALYTICS AND SOFT SENSORS



Process predictors and measurement of unsensored process variables

### PREDICTIVE MAINTENANCE



Mobile and desktop predictions, views and notifications of maintenance targets

## NAPCON INFORMER 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.

### MAINTAINABILITY

**NAPCON Understand Services** guarantees that your valuable investment works reliably and securely throughout its life cycle.

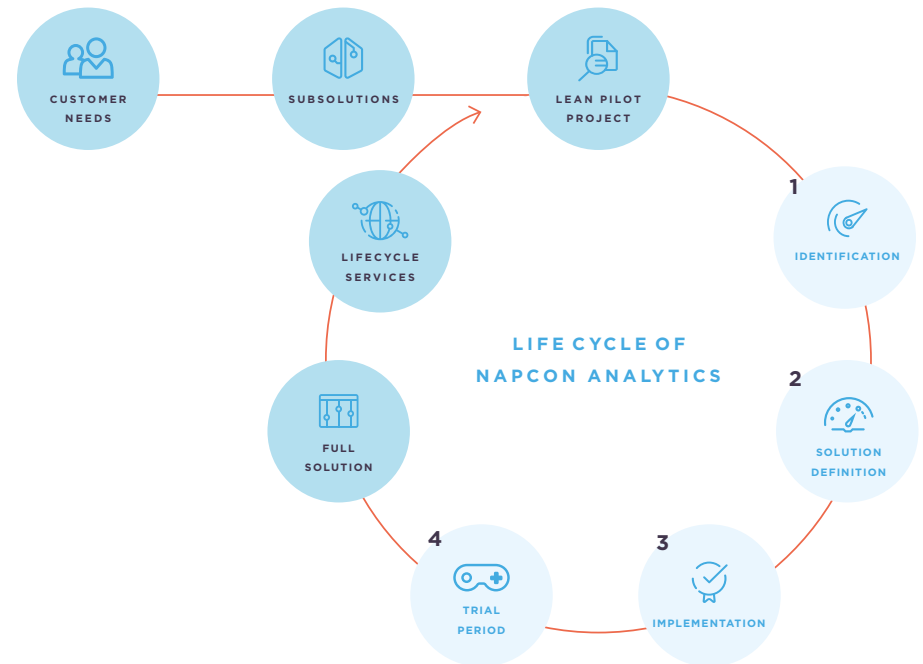
## EASY START WITH NAPCON ANALYTICS SOLUTIONS

Analytics consist of Core software and extension tool packages for various needs which can be updated later if business requirements change or expand. Existing packages are Online calculations, Reporting and Advance calculations with Python packages. Extensions include ML Framework for machine learning use cases. NAPCON ML supports natively On-Premise, Cloud and Hybrid installations. Implemented on existing OPC UA connection or NAPCON Informer services.

### EASY START WITH NAPCON ANALYTICS SOLUTIONS TRIAL USE:

- Fast implementation of subsolution for your business pain. Make decision of full implementation after satisfied trial period. You win (experience), or you win greatly.
- NAPCON Analytics Lean pilot project with software core functionality and fast agile project. Includes identification of fast benefits for business, solution definition for pilot and implementation with two months complement trial period.
- Get familiar with your new opportunities to streamline asset operations during trial period. Gather experience and secure for investment during trial period usage and get ready to full implementation of NAPCON Understand potential.
- Decision of continuity after trial period: continue for full solution and commitment or fail fast. If you are not satisfied, you don't need to go further. If you feel secure with NAPCON, we can jointly commit for full-scale solution implementation.
- Enjoy reliable and cyber secure solution through it's life cycle with NAPCON Understand Services

Accumulate digitalization and operational intelligence know-how, scale and expand NAPCON Analytics to other operations and functionalities with extension packages.



## NAPCON UNDERSTAND SERVICES

NAPCON Understand services make our IIoT platform, operational intelligence, process and IT experts at your disposal. We are ready to ensure that you get the best benefits of NAPCON software over the entire life-cycle of your solutions

### NAPCON UNDERSTAND SERVICES PROVIDES

#### ALL IN

NAPCON team includes experts from all fields that needed to design and implement top-performing automation solutions, from process technology experts to user-interface designers and from software engineers to project managers.

#### IMPLEMENTATION PROJECTS

Our project services help you to implement operational intelligence solutions. We can assist you on a broad scale from expert support to turn-key deliveries.

#### UNDERSTAND MAINTENANCE & DEVELOPMENT SERVICES

We keep your advanced process control and optimization solutions in top condition even when there are changes in operating targets, feedstocks, process equipment and basic process controls.

#### SOFTWARE UPDATE SERVICES

Guarantees that your NAPCON Informer and NAPCON Analytics have latest versions of NAPCON software suite. Enjoy reliable experience and up-to-date cyber security.

#### CALL DESK SERVICES

This service helps you to contact our experts directly in case you need technical support or if you face issue with NAPCON Understand solutions. Our service desk experts will provide you information and solve your problem remotely or on site.

Make the operation and optimization of your plant performance as effortless and efficient as possible. We offer state-of-the-art maintenance and development services of both the software as well as hardware to ensure that the NAPCON Understand solutions evolve together with the plant, process equipment and operative business targets.



# REFINERY OPTIMIZATION WITH NAPCON KPI DASHBOARDS.

Neste, world's largest producer of renewable diesel fuel, decided to utilize NAPCON Analytics KPI Dashboards to strengthen its Porvoo refinery operations. Co-operatively developed solution providing real-time visibility into plant operations is already in use. Aim is to expand KPI Dashboards to other Neste refineries after Porvoo pilot use phase.

Target of implementation is economical: to achieve more efficient running of whole plant by visualizing optimal operations and gaps between production plan and realized operations. For plant operators, seeing these gaps in real time helps to make the right decisions as well as improves everyone's situational awareness of current state of production.

NAPCON implements KPI Dashboards for refinery's every product line and production unit. NAPCON analytics is used also to implement overall product line visualizations with similar manner. This helps operators to avoid suboptimization and improves the final product total yield and cost management.

Neste is extremely happy for NAPCON performance to quickly bring added value for Neste's ongoing digitalization efforts. *"NAPCON's in-depth process industry expertise is clearly reflected in the implementation of the project. They speak the same language as us. This is significant advantage for our digitalization execution"* Says Marko Pekkola, Executive Vice President, Oil Product, Neste.



*Illustrative example of KPI Dashboard gauges and process view. Product chain views are customer specific.*

## BUSINESS ADVANTAGES OF NAPCON UNDERSTAND

### BENEFITS

The payback period for NAPCON Understand solutions can be as short as few months.

Some of the many business benefits of NAPCON Understand solutions are:

- Increased plant profitability by optimizing the production rates of the most valuable products and minimizing the production costs.
- Tighter control of product quality and reduction of variation.
- High availability of the systems.
- Adjustable as the processes and operating targets change.

NAPCON Understand solutions can be installed on any existing process control system (DCS) and historian databases with OPC connectivity.

### SITUATIONAL AWARENESS

Plant manager's and operational personnel's situational awareness is essential for maximum security and performance.

NAPCON Analytics KPI Dashboards, assists to achieve production targets and optimal performance, reduces risks and improves purposefulness.

Depending on the production situation, most weight can be put e.g. on production maximization, maximization of certain yields, minimization of energy costs or maximization of process run length.

### AVOID SUB-OPTIMIZATION

Plant-wide economic optimization for plants where the production maximization of a single unit leads to suboptimal performance of other units.

This can be avoided with NAPCON KPI Dashboards, whole product chain can be illustrated from raw materials to end product flows together with costs like energy.

Later on, plant-wide optimization with NAPCON Optimizer is easy to implement over NAPCON Understand. Optimizer finds and implements the best set points for process variables every minute - even when process conditions are constantly changing.

### WE MAKE IT WORK

NAPCON Understand is a portfolio of platform independent software for data acquisition, synthesis, advanced analytics and realtime information purposes, to serve production and production planning like it's meant by Smart factory concept. Soon with advanced AI and process Digital Twin also, so please stay tuned!

NAPCON Understand life cycle services make sure that you always get best benefits from your Analytics and Informer software and our tailored solutions.

NAPCON's goal is to ensure that you get solutions that fit to your needs and meet your operative targets.

# KNOW MORE, PERFORM BETTER.

NAPCON Understand solutions are about data and its use for production performance improvement. Grasp data, refine it into knowledge and let it help you to maximize your production efficiency – Build on the actionable wisdom that NAPCON Understand refines from the endless streams of data.





### 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*



### 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*

**WWW.NAPCONSUIE.COM**

**NAPCON@NESTE.COM**

**+358 (0)10 458 11**