Creating safety.
With passion.

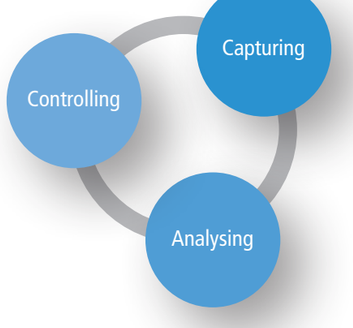
NewTec

NTSecureCloudSolutions

Your secure way into the cloud

www.newtec.de

NTSecureCloudSolutions



Building blocks for highly secure IoT Applications

Industry 4.0 and the Internet of Things (IoT) are no longer a vision of the future; they are a reality. Many manufacturers, particularly in mechanical and plant engineering and the automotive industry, are using digital technologies to produce more efficiently, but also for their own products and new services. Intelligent, interconnected systems consistently support activities along the entire value chain. If you want to remain competitive, you can't miss the boat in the digital transformation.

Exploit opportunities

Technologies for Industry 4.0 are useful in every area where companies can access process-relevant data, such as product, operation, status, environmental or spatial data. This affects all elements of the value chain: machines, material and parts, pallets, bands and vehicles, robots, production and logistics systems, employees, suppliers and customers – and of course the finished products from the tool right up to the wind turbine.
This data can be used in various ways: for efficient control of production and logistics, to optimise maintenance and repair work or to access completely new business areas through innovative information-based business models.

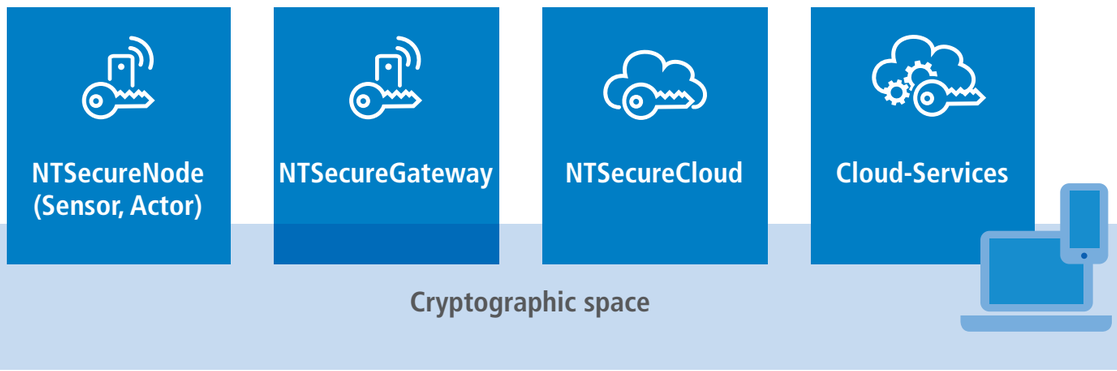
Solutions and Services for Secure IoT Applications

With NTSecureCloudSolutions, NewTec is offering a comprehensive IoT solution and service platform which will support companies in implementing innovative and secure products and services in the cloud environment. This means, that IoT applications, where the highest level of security is important right from the beginning, can be realised quickly and with little expense: e.g. Industry 4.0 scenarios, interconnected medical devices or applications for e-mobility or facility management.

Your advantages

_ Transform data into profitable intelligence
_ Faster development of operational systems
_ Devices and services rolled into one and from one place
_ Security as a priority
_ Support through the whole life-cycle

NewTec is a full stack integration partner for safety and security relevant solutions. We cover the complete life-cycle of an IoT product: from brainstorming, target as well as market and business area analysis to product development and architecture concept right up to integration, maintenance and managed services.



Until 2027, there will be more than 30 billion interconnected "things" in Germany.

(Source: IOT ANALYTICS 2023)

Market researchers also expect an increasing willingness to invest in IoT solutions in the coming years - especially in the industrial sector. The Industrial IoT market is expected to grow to more than USD 1,110 billion (1.11 trillion) by 2028; this corresponds to an annual growth rate of almost 23 percent (source: Grand View Research 2021).

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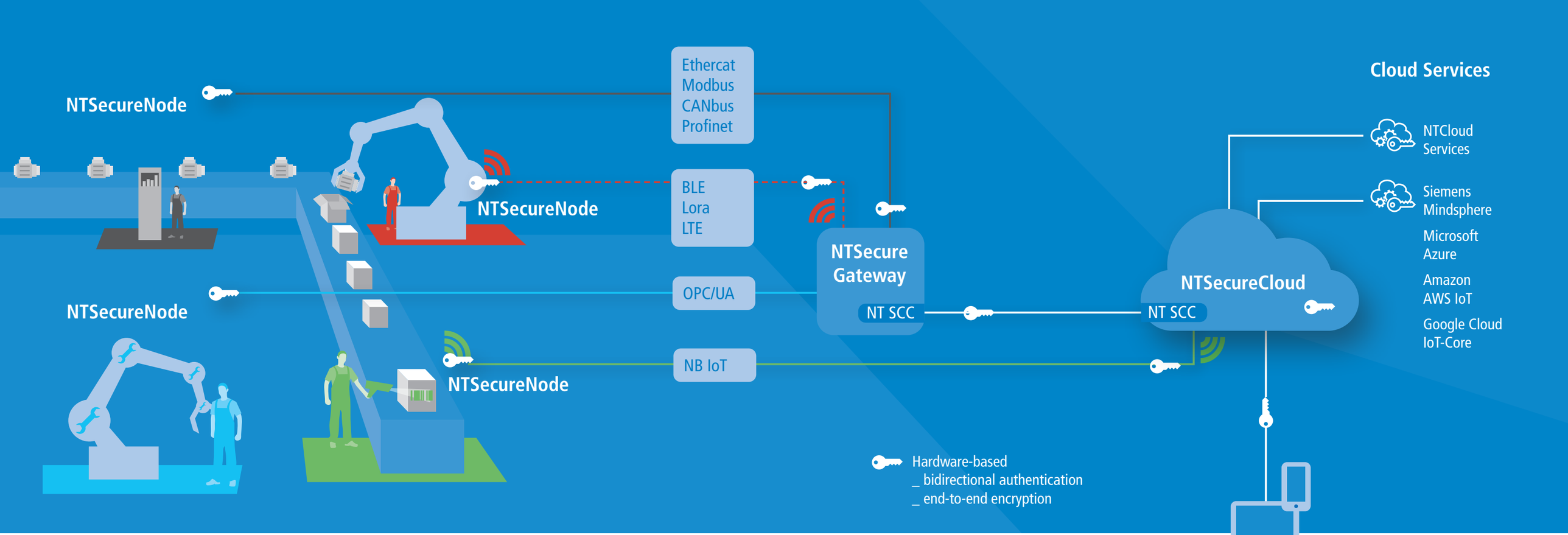


Capturing. Analysing. Controlling.
Secure and secured processes in industrial and system engineering

Security & Safety first

IoT applications require interconnected systems with a large number of components – spatially distributed, often wirelessly connected IoT devices, operative systems, cloud resources from third party providers and the connection to the devices to be controlled. The processes to be controlled are usually business-critical and it is not uncommon that the safety of the people involved must also be guaranteed. Here, the protection goals of IT security and functional safety can contradict one another, for example, if, in the interest of safety, data needs to be collected and entry possibilities have to be created which make security measures more difficult.

This is why a conclusive, holistic concept is necessary right from the planning stage which covers both, safety and security, and which includes the complete system. It is imperative to protect IoT devices from manipulation on-site and link them with cloud-based applications through a secure infrastructure. This includes the secure integration into the IT systems relevant for each application, but also the functional safety device, machine and system controls.

The target-oriented controlling of processes always requires the capturing and analysis of current process data. The special feature of IoT applications is the complexity of the networked system. Here, a variety of data is mostly collected from various sources, where the analysis and evaluation can be relocated to the cloud – with significantly higher requirements for security, connectivity and service.

The NTSecureCloudSolutions platform covers all aspects of the IoT process control.

Typical Applications

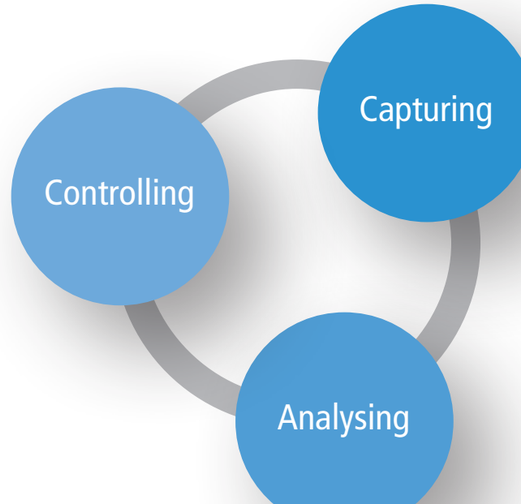
_ **Capturing of data on-site**
Capture, process (edge-computing), filter and transfer machine and sensor data securely

_ **Analysis and evaluation in the cloud**
Guarantee functionality, performance and data security

_ **Controlling devices, machines and systems**
Safe controlling of drives and PLCs

_ **Controlling business processes**
Secure information transfer to operative systems

_ **Firmware updates**
Secure firmware distribution and deployment infratructure



NTSecureCloudSolutions

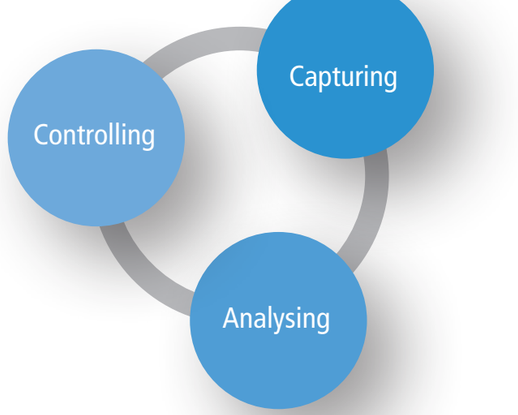
A quicker way to success: Your platform for secure IoT applications

The core of the NTSecureCloudSolutions is a turnkey platform of certified secure hardware and software solutions with essential security functions such as e.g. certificate, policy and wireless device updating.

This includes IoT end devices (sensor nodes) and IoT gateways for the protected cloud connection, analysis and management tools as well as solutions for the functional safety when controlling devices, machines and systems.

As needed, these devices and solutions are either available as standard products (out-of-the-box) or customer-specific developments.

Numerous services including consultation, training, operation and support complete the offer.



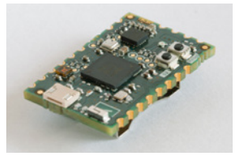
NTSecureCloudSolutions: Secure Components

All components carry hardware-based security elements to provide both state of the art bidirectional authentication and cryptography capabilities. This allows not only for data acquisition but also for controlling and steering applications.

All components feature
- Protected key and certificate storage
- Individual provisioning for multiple project-specific CAs
- Hardwaresupportforsymmetricandasymmetricauthentication and encryption functionality

NTSecureNode

Secure nodes bring highly secure connectivity to your existing device. They collect, merge, buffer and filter data and provide them over trusted channels to cloud services. Recorded data can be encrypted immediately for a specific point of interest, which allows for a true end to end encryption. Vice versa the trusted channel can be used for configuration, control and update applications. NTSecureNodes connect to SecureGateways e.g. wireless via WLAN, BLE or NB-Radio or directly to a secure cloud service via NB-IOT.

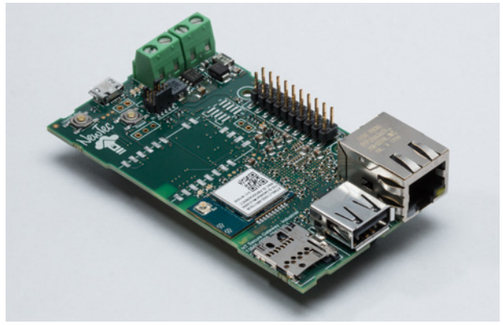


NTSecureNode BLE100
Data acquisition platform for stationary IoT networks

NTSecureNode NB100
Data acquisition platform for large-area IoT networks (LTE NB-IoT)

NTSecureGateway

The IoT gateway is typically used to connect SecureNodes to local or cloud services. Due to various fieldbus capabilities, it is also be used to connect existing devices to collect, process and transfer data securely to cloud applications. Detailed configurable end-to-end encryption and anonymization reliably secures sensitive data. NTSecureGateway provides Ethernet, BLE, NarrowBand IoT and WiFi. Various radio standards are available as expansion modules.



NTSecureGateway
Easy connectivity for legacy production environments

NTSecureCloudConnector (SCC)

SCC is a software stack, providing a trusted channel to secure cloud services regarding bidirectional authentication and robust payload encryption. SCC is compatible with various secure elements, TPMs and HSMs. Besides a highly secure connectivity to the NTSecureCloud SCC is capable to connect third-party platforms like Siemens Mindsphere, AWS IoT, Google Cloud IoT-Core and MS-Azure IoT-Hub.

NTSecureCloud

NTSecureCloud is a scalable, highly secure data hub which is commonly used to provide encrypted or decrypted data to digital services like web applications, ERP- and MES-systems.
It can also be used as a secure cloud-proxy to provide data to different third-party cloud services.

Cloud Services

NTCloudServices

NewTec acts as full stack integration partner for safety and security relevant solutions. Besides the building blocks for secure cloud solutions NewTec offers cloud-based data analytics and a secure application framework for platform-independent client-server applications. Typical applications are:

_ Pattern recognition
Turn your raw data into valuable production and process knowledge. Sensor data is automatically analyzed, classified and put into a wider context. This provides valuable insights into your existing business processes or lays the foundation for the development of new business areas.

_ Image processing
Through the continual capturing and evaluating of camera images, important production and security-relevant information can be obtained and made available. Deviations from quality requirements and security regulations can be recognized and escalated, if necessary.

_ maintenance on demand / predictive maintenance
Process data can be used to measure attrition of parts which can then be replaced according to their wear and tear.

Third-party Cloud Services

_ Siemens Mindsphere
NewTec is part of the Siemens Mindsphere gold partner program. NewTec acts as hardware integration Partner for secure Mindsphere applications.

Gold Partner MindSphere | SIEMENS | MindSphere

_ Compatible Cloud Provider
NewTec SecureCloud components support cloud authentication and connectivity to AWS IoT, Google Cloud IoT-Core and MS-Azure IoT-Hub.

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With passion.

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