

# Digitizing Defense Supply Chains

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False  
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ROR_Z":  
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mirror_mod.use_z = True  
#selection at the end -add back the deselected mirror modifier object  
mirror_ob.select= 1
```

Reliability is the most important aspect of material for defense purposes. Having reliable quality data is the foundation of reliability. Establishing digital processes is the foundation for efficiency, transparency and cost control. ARXUM® has a unique process of establishing a fully digital process of data exchange in a supply chain with secure documentation of interactions, supply chain events, exchange of documents, digital assets or component data.

## Defense Sector Use Cases

- Automated access to defense supplier data (or automatic provision of data to suppliers) during manufacturing based on ARXUM® Suite, reducing administration effort, providing transparency
- Providing project tracking of custom made-to-order equipment through fulfilment of Smart Contract based milestones, reducing risk and providing faster contractor payments
- Securing the identity and integrity of software modules and software versions in devices (stationary, mobile, combat IoT)
- Keeping track of critical material supplies and logistic processes, e.g. in combination with IoT, trackers or GPS
- Digitally securing reconnaissance & observation data and information (images & measurements) as immutable, time-stamped proof e.g. in international missions
- Monitoring production of dual use components (e.g. 3D printed)
- Qualification control of staff before granting access to assets, e.g. for technical maintenance

## Usecase: QA Data Access

### Riveting datasheet

Plane-ID	1
Component-ID	1
Rivet-ID	3
Height	0.779mm
Diameter	4.103mm
AI Evaluation	Good
Last modified	2019-02-21 08:09:10

Basic rivet data

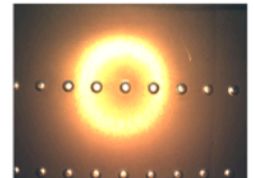
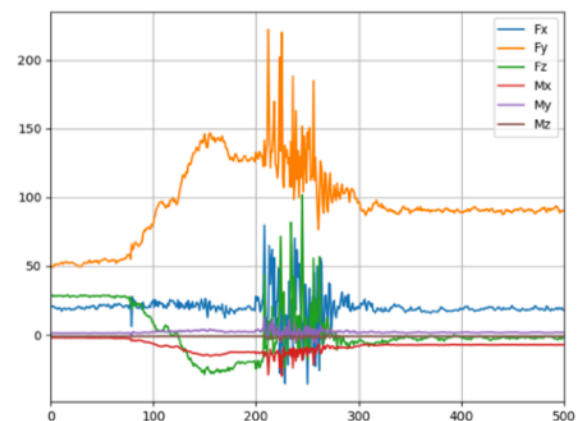


Image of rivet head



Force graph

ARXUM® has already implemented the automatic access to airplane manufacturing data (AI based measurements of rivet quality of Airbus A320 section assembly). Blockchain based Smart Contracts allow for unprecedented automation capabilities in the interaction of companies!

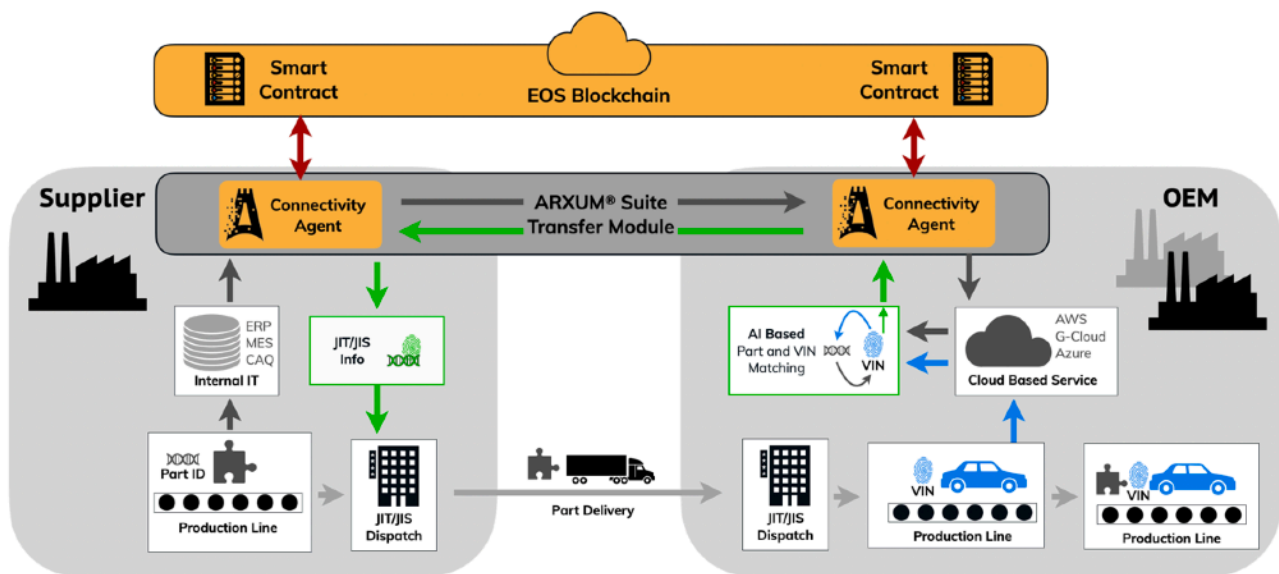
The ARXUM® Suite is providing direct access to data through Blockchain technology with cryptographic access protection

# MAINTAIN IMMUTABLE PROOF OF CLAIMS AND QUALITY

## Blockchain Features Relevant to Defense & Military Use Cases:

- Blockchains are built upon cryptography as the core of the technology
- Extremely robust due to distributed system with an arbitrary number of mirrored and self-synchronizing nodes, and decentralised access
- Integrated consensus algorithm provides a single version of truth („state“ of data)
- Smart Contracts allow for automation of processes and reactions on external events
- Clear identification of participants, transactional system with integrated logging

## Industry Example: Exchanging a Digital Twin



In the automotive sector ARXUM® has deployed a unique solution for supply chain digitization to establish a secure and automatic data exchange between companies:

Data owners grant access to specific data in their internal IT systems based on blockchain-based smart contracts. Partners can automatically pull data (e.g. on quality or logistics) from suppliers and obtain internal production data that must not find its way to third parties.

Production data itself is never stored on-chain but transferred through an encrypted, separate and secure channel, using the inherent cryptographic features of Blockchain.



Deep Holistic  
Supply Chain Digitisation

