Improved Traceability of Parts and Products

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Industrial Engineering

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3. Issue & Challenges
4. Requirements
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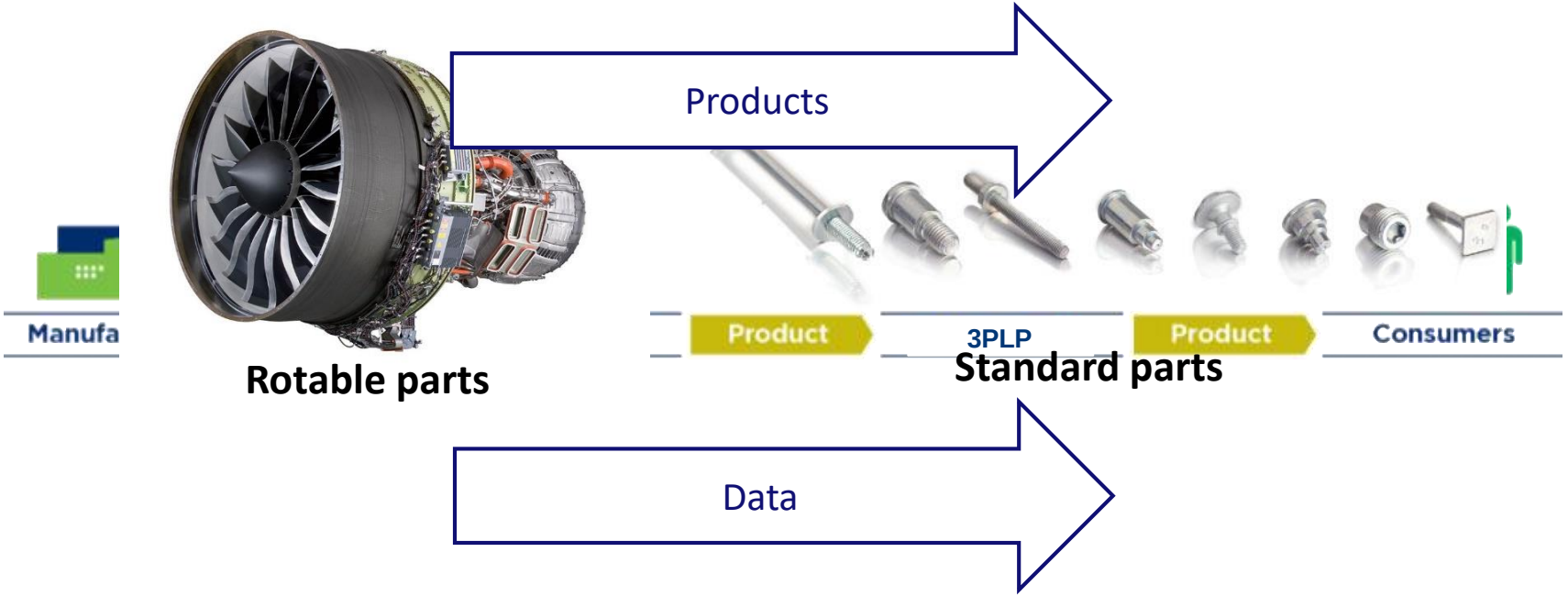
- Aerostructures
- Electrical wiring systems
- Landing gear
- Services

Fokker Services & Traceability



Process Issues

Streamlining this process to drive profit!

Problems:

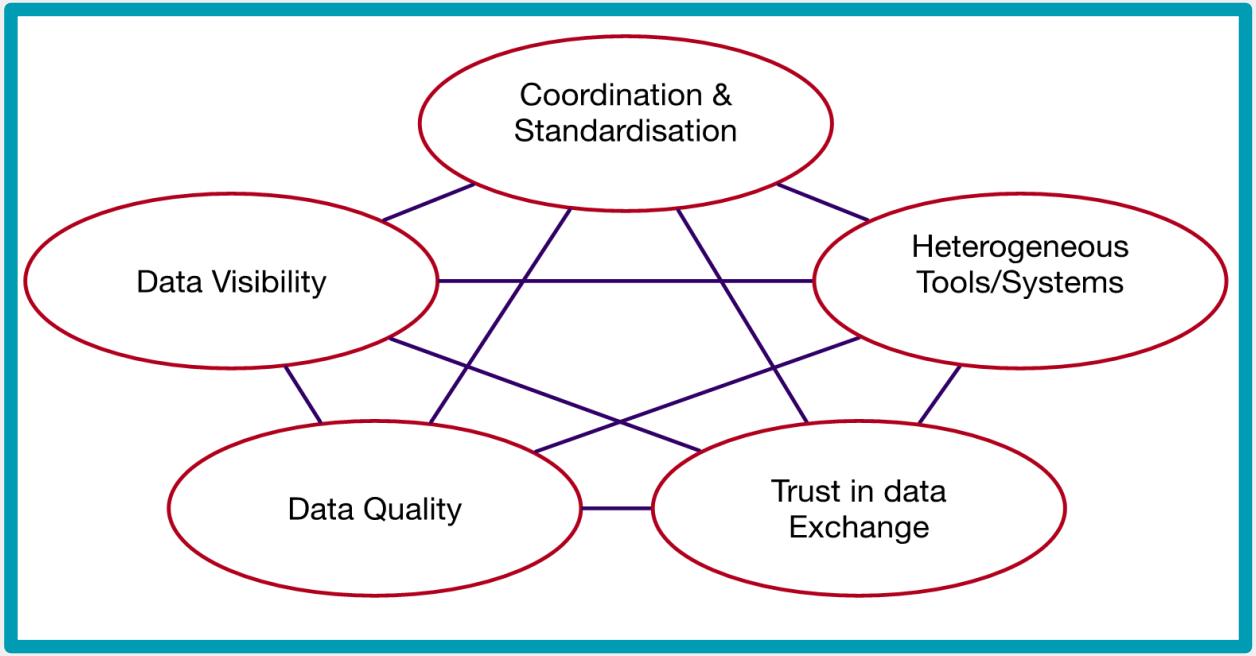
- Incomplete
- Inaccurate
- Unnecessary checks interoperability

Caused by:

Causes:

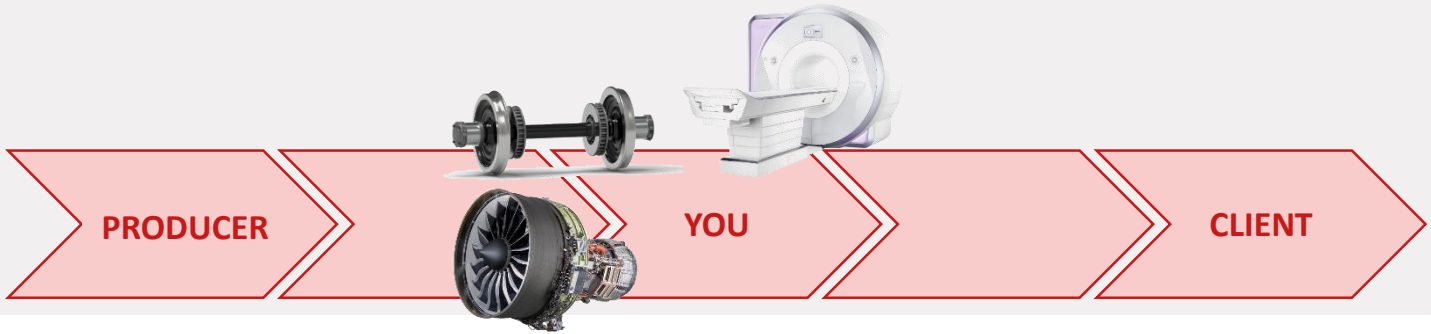
Paper documentation
Missing standards
Inefficient

Design requirements for traceability improvement



System Requirements/Challenges

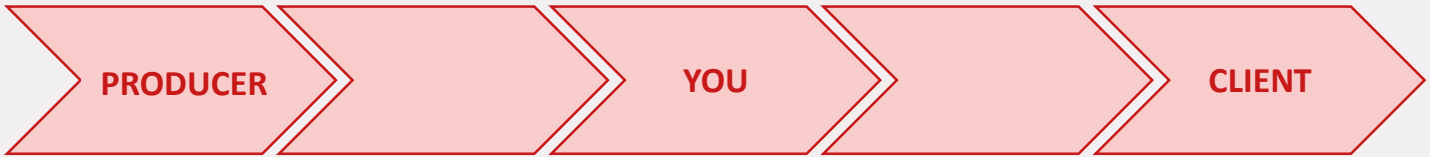
- Data exchange
- Rules for quality and certification
- System architecture (centralized vs. decentralized)
- Trust
- System interfaces



System Requirements/Challenges

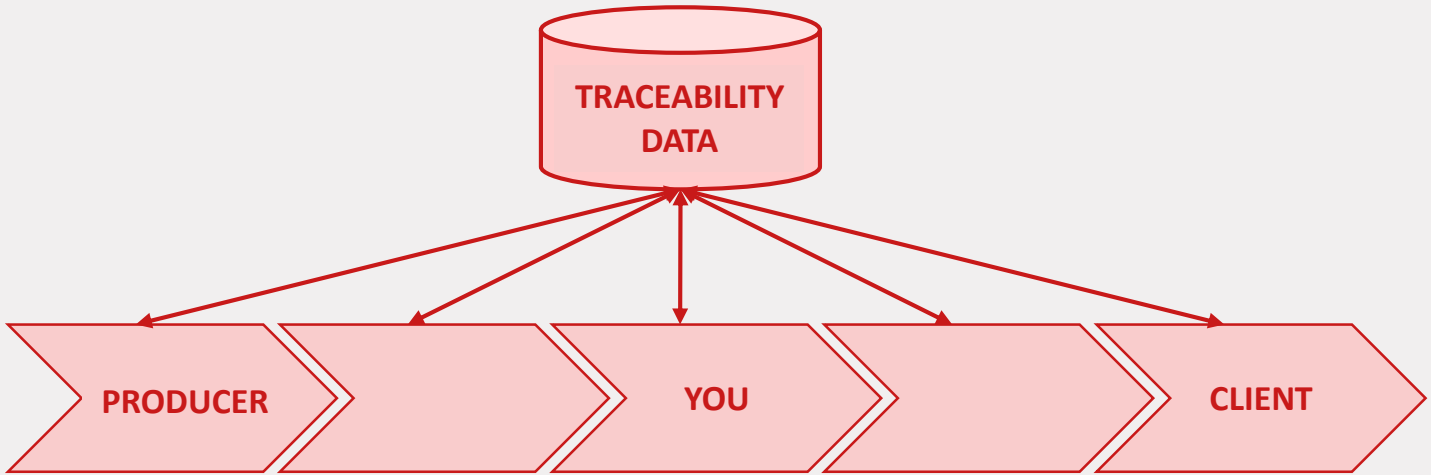
Enforce rules:

- product must be certified by a certified manufacturer;
- product must have been handled correctly;
- client must enforce contractual obligations;
- recall must be enacted through the entire chain;
- …



System Requirements/Challenges

Choose a system architecture (centralized vs. decentralized)

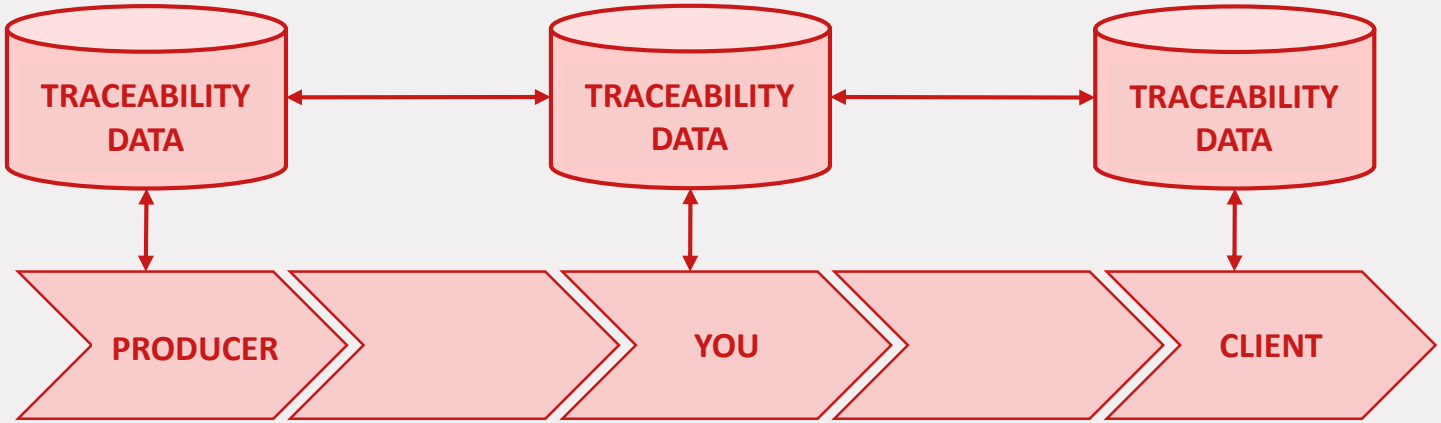


System Requirements/Challenges

Choose a system architecture (centralized vs. decentralized)

Or combine them by using a system in which:

- **no one owned the data (or the system); but**
- **access is available to everyone, if they are trusted**



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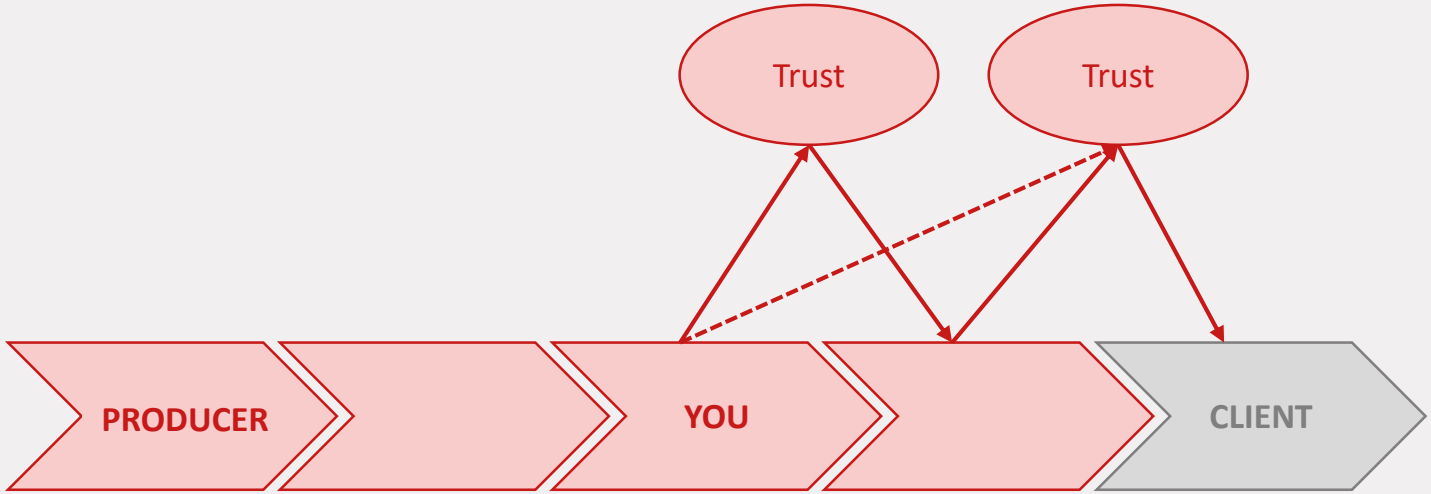
System Requirements/Challenges

Organize trust:

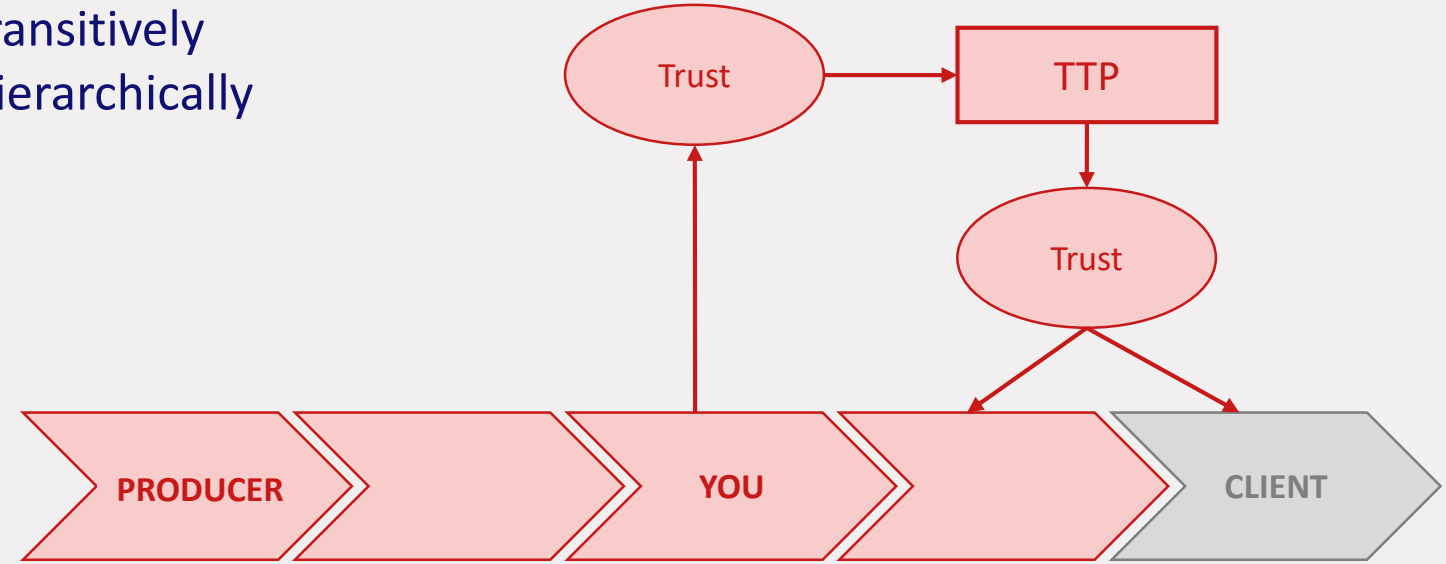
- directly
- transitively



System Requirements/Challenges

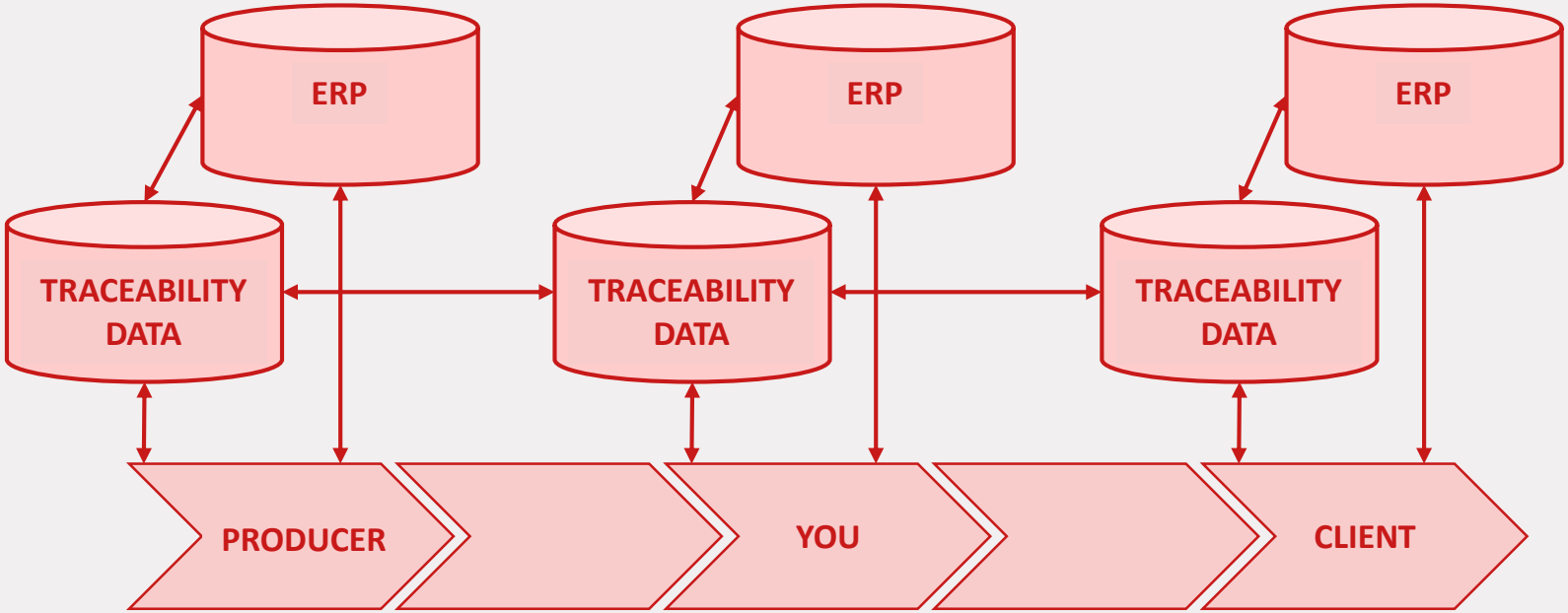
Organize trust:

- directly
- transitively
- hierarchically



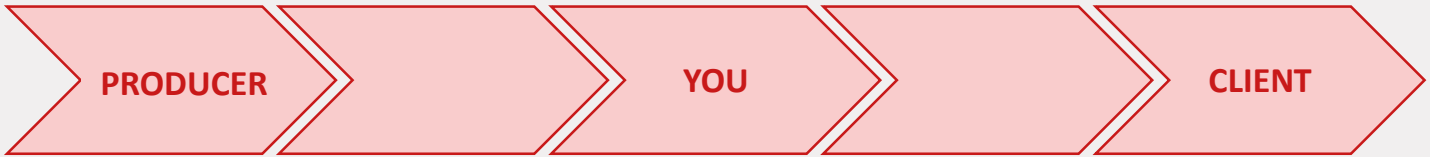
System Requirements/Challenges

Develop interfaces



System Requirements/Challenges

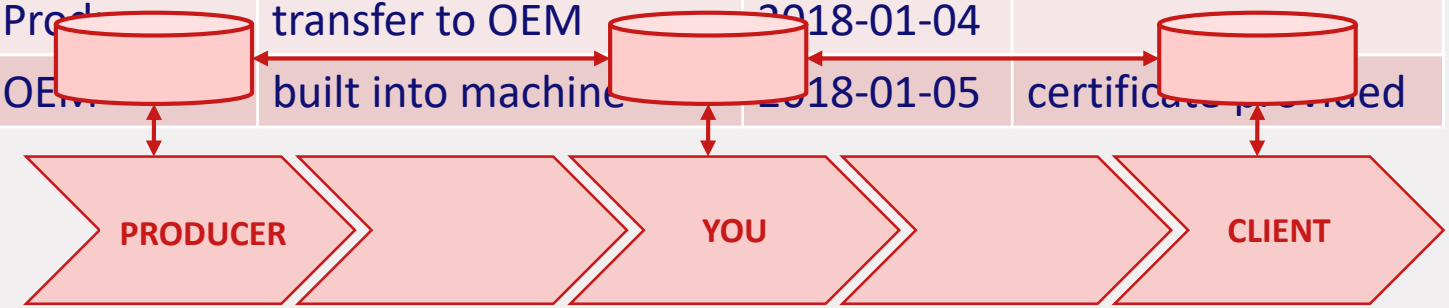
- Decide on traceability data to exchange
- Decide on quality and certification rules
- Choose a system architecture
- Organize trust
- Develop system interfaces



Why blockchain fits

- Decide on traceability data to exchange ☑
- Decide on quality and certification rules ☑
- Choose a system architecture ☑
- Organize trust ☑
- Develop system interfaces ☐

Producer	produced	2018-01-03	meets regulations
Prod	transfer to OEM	2018-01-04	
OEM	built into machine	2018-01-05	certificate provided



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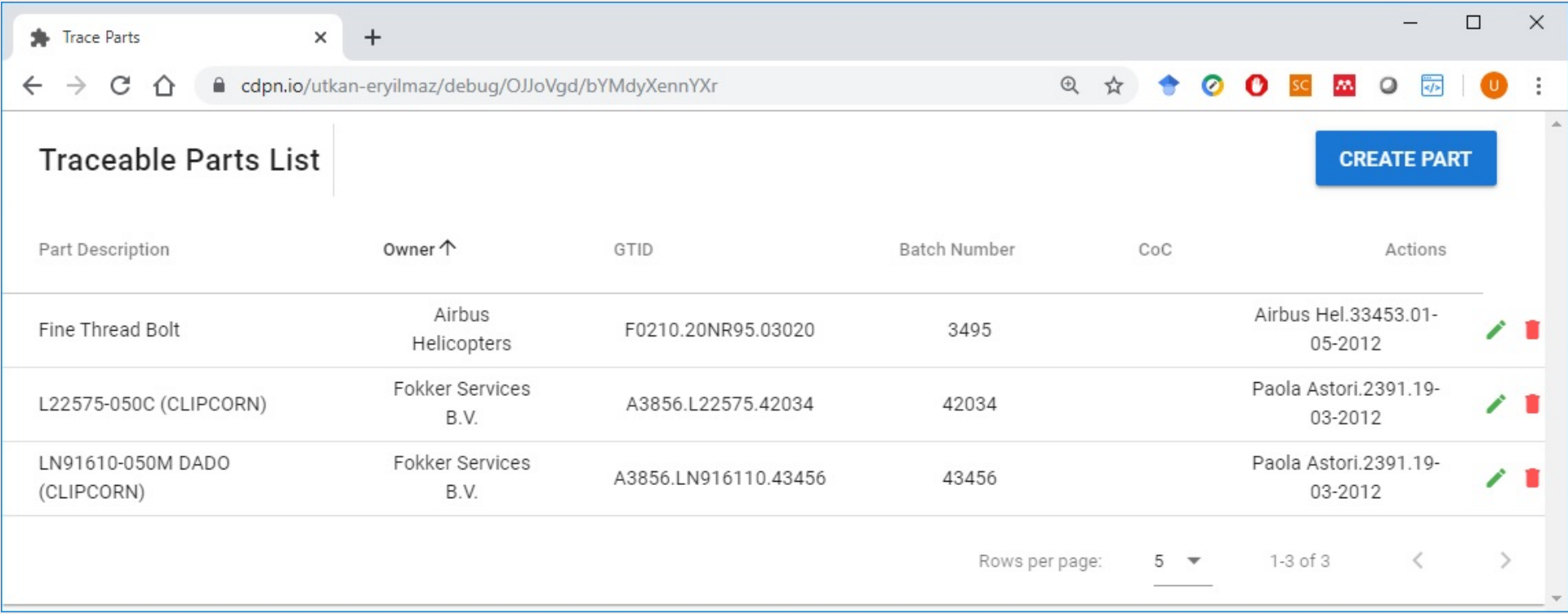
Tool


Trace Parts
cdpn.io/utkan-eryilmaz/debug/OJJoVgd/bYMdyXennYXr
Traceable Parts List
CREATE PART
Part Description
Owner
GTID
Batch Number
CoC
Actions
Fine Thread Bolt
Airbus Helicopters
F0210.20NR95.03020
3495
Airbus Hel.33453.01-05-2012
L22575-050C (CLIPCORN)
Fokker Services B.V.
A3856.L22575.42034
42034
Paola Astori.2391.19-03-2012
LN91610-050M DADO (CLIPCORN)
Fokker Services B.V.
A3856.LN916110.43456
43456
Paola Astori.2391.19-03-2012
Rows per page:
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1-3 of 3

TRU Update Airbus Helicopters (3GSZ1)

Event Type: Ship

Event Data: Fokker Services B.V.

TRU Update Airbus Helicopters (F0210)

Event Type: Order

Event Data: Fokker Services B.V.

TRU Update Airbus Helicopters (F0210)

Event Type: Split

Event Data: 50

Airbus Helicopters (F0210) produced
Fine Thread Bolt (20NR-95)

GTIN No: F0210.20NR95.03020

Batch Nr.: 3495 01-01-2019

SHOW COC SHOW MANUFACTURER CERTIFICATE

Trace Parts

cdpn.io/utkan-eryilmaz/debug/abbazOg/dXMqBNZvgpGr

M

Send trace via email

SEND

Fokker Services B.V. (H0W98): Fine Thread Bolt (20NR-95)

Producer GTIN No: F0210.20NR95.03020

Batch Nr.: 3495

Quantity: 50

UPDATE SPLIT REQUEST RELEASE

Fokker Services B.V. (H0W98) received Fine Thread Bolt (20NR-95) from Airbus Helicopters(F0210).

GTIN No: F0210.20NR95.03020 16-05-2019

SHOW COC SHOW CERTIFICATE

Broader context

Client organizations:

- Fokker services
- NS
- Philips
- Ricoh
- Louwman Logistics

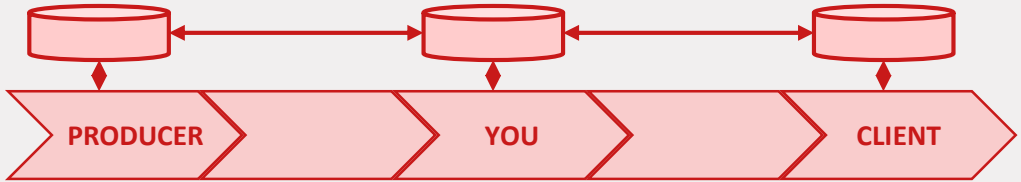
(IT) Service providers:

- IBM
- GS1
- Districon

Dissemination bodies:

- SLF

Summary



Traceability of actions on parts and products is beneficial:

- for quality control
- for customer service
- ….

Blockchain provides:

- a shared distributed ‘ledger’
- that can be used to enforce and manage trust; and
- automatically enforces rules.

This makes it ideal for facilitating traceability.

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