



# Blockchain and the PI System

*A case study on Asset Lifecycle Management*

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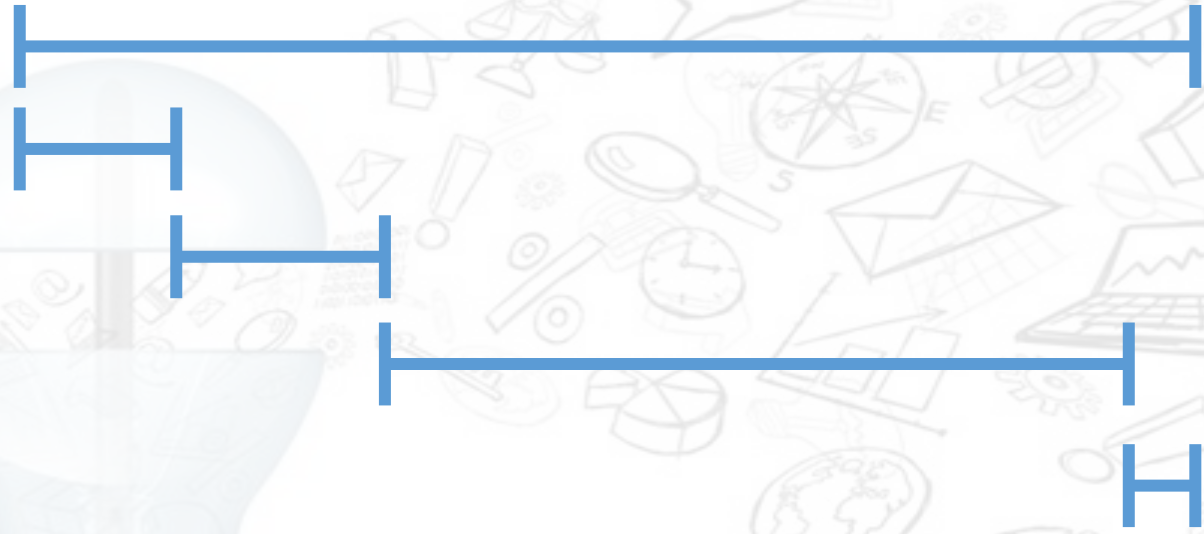
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## Blockchain and the PI System

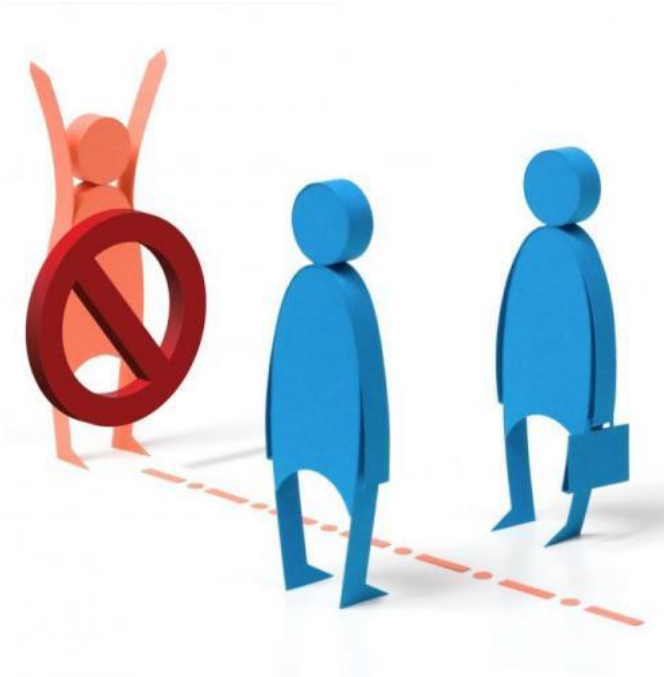


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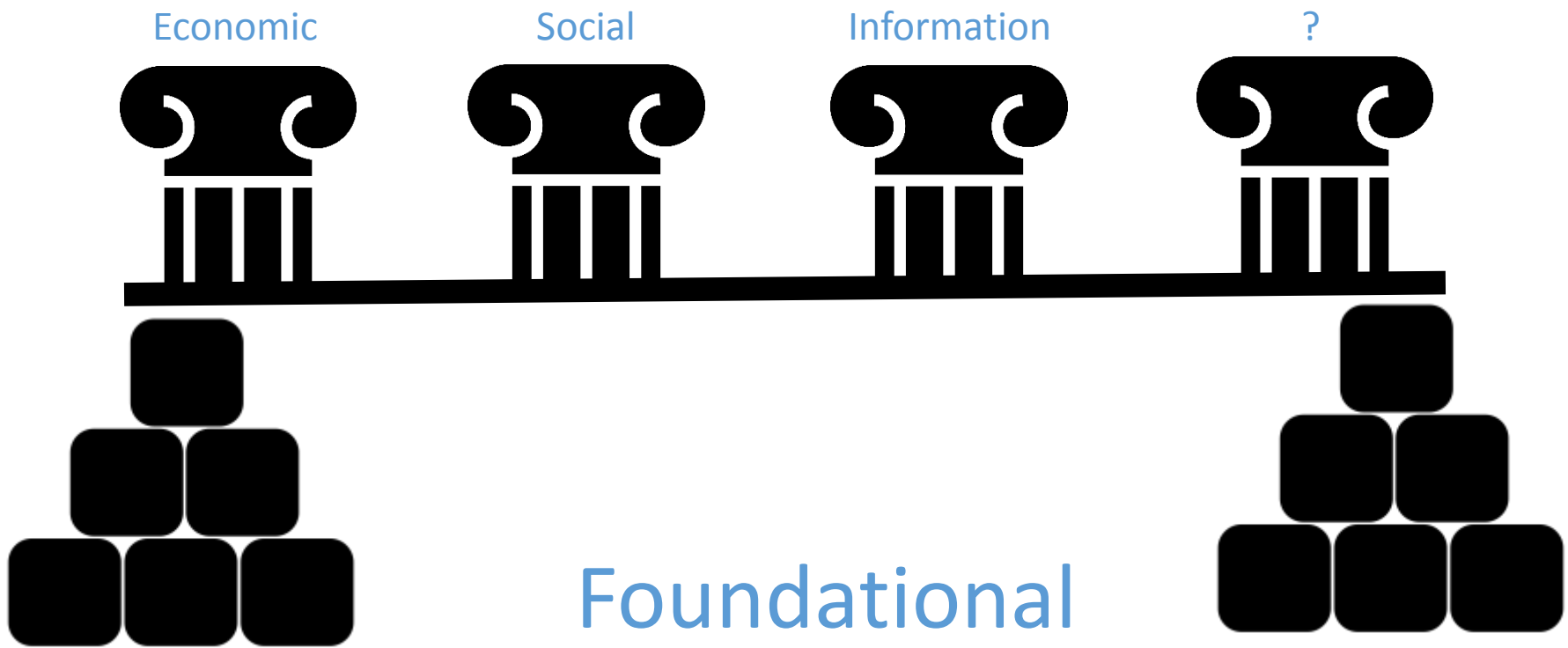


# Trust the system

Remove intermediaries from the **value** exchange process



Disruptive



YES NO

- ☐ ☐ Is there a **predictable, repeatable** process that lends itself well to **automation**?
- ☐ ☐ Is there an **ongoing or long-running transaction or process**, rather than a process that occurs only once?
- ☐ ☐ Are there **multiple stakeholders** in this process or value chain?
- ☐ ☐ Is the role of **reconciling disparate** data usually played by one party or a limited number of parties?
- ☐ ☐ Remembering that value is not only monetary, is there an **element of value transfer**?
- ☐ ☐ Is there value in an **immutable record**? Or is an immutable record a requirement?

# BLOCXS: A DUTCH CREATIVE BLOCKCHAIN COMPANY



AMSTERDAM TECH CITY



**BLOCXS.com**

Connecting the  
blockchain world  
with  
the *real* world



Marco



Johan

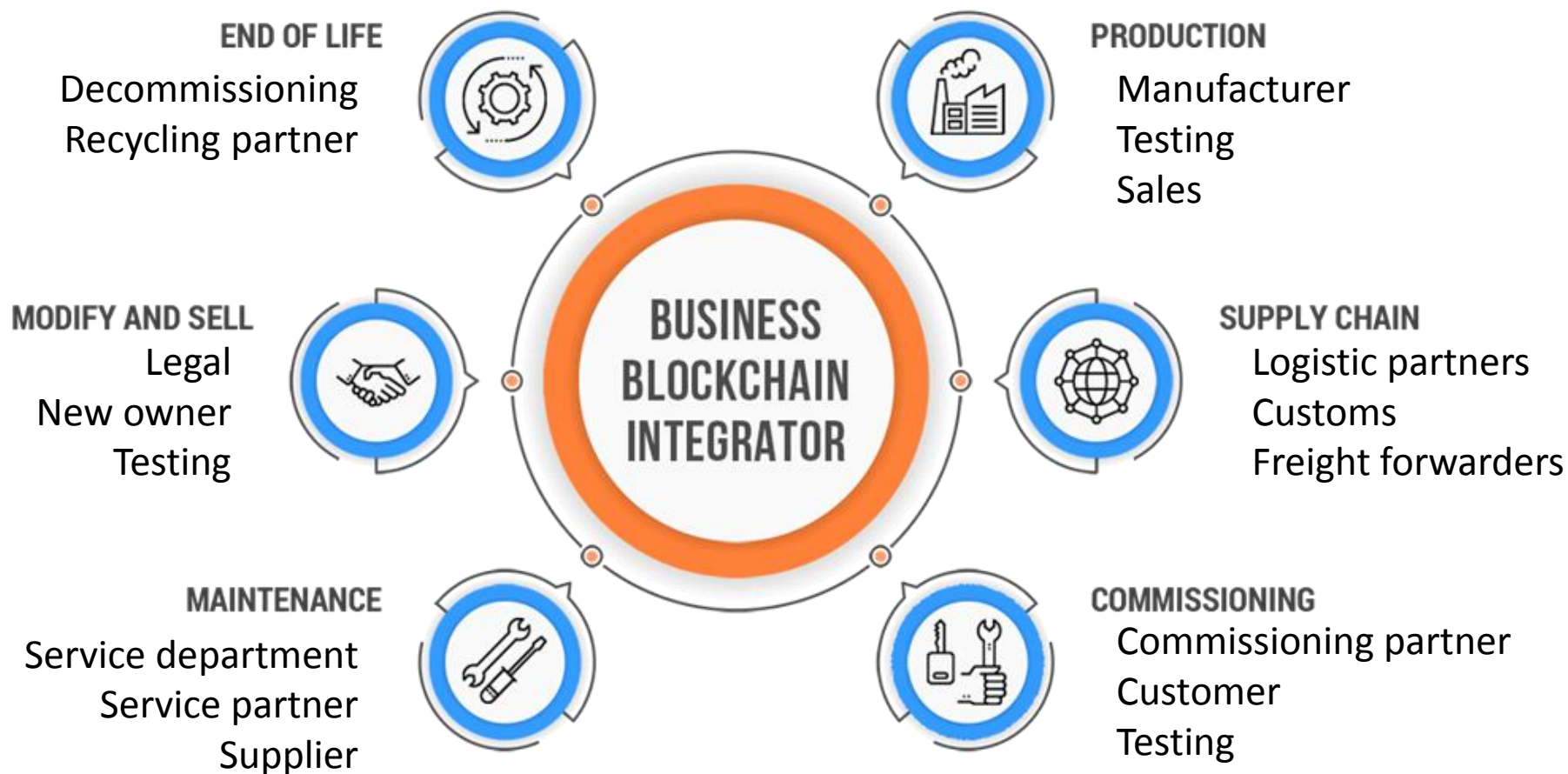


Peter





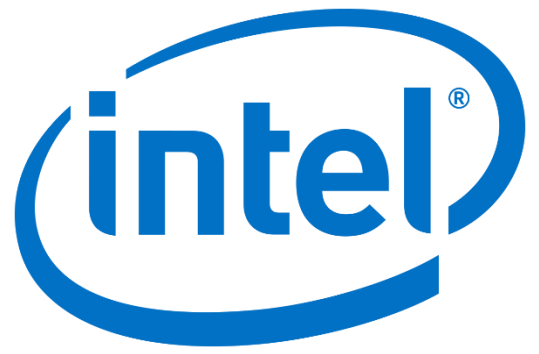
# ASSET LIFECYCLE IN A NUTSHELL







# HYPERLEDGER





## Main

Motor: Electric Aircraft  
Type: MK453  
GS1 ID: 36286482429 Serial:  
8947389  
Date Production: 4-4-2018  
Owner: Factory  
Status: Produced

 PI Server



## Recycling

Owner: Discontinued  
Status: End of Life  
Component: 123522  
Component: 779440  
Component: 233929

 OSIsoft Cloud Services



## Logistics

DHL nr. 9483829  
Date of Del: 5-4-2018  
Warehouse: Stock

 Edge Data Historian



## Commissioning

Test 12321: Ok  
Test 5848: Ok  
Comm. Date: 5-6-2018  
Status: Installed

 Edge Data Historian

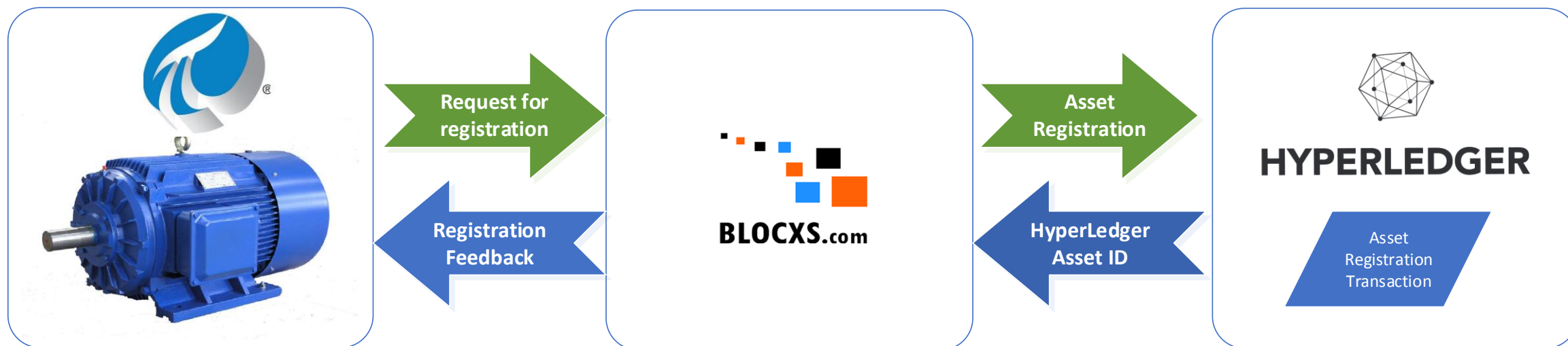
 PI Server





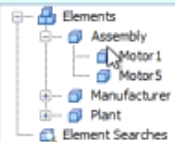
**HYPERLEDGER**

**DEMO**



# Case 1: Asset Registration

## Elements



## Motor5

General Child Elements Attributes Ports Analyses Notification Rules Version

Filter		
Name	Value	
HyperledgerID	String Array	
ID	5030097e-09d2-49dc-8dce-38a35de0973e	
RPM	Pt Created	
Speed	230.149383544922 rpm	
Temperature	57.1095733642578 °C	
TestStatus	UNTESTED	
Vibration	57.3254547119141 Hz	

Name:  Group by: ☐ Category ☐ Template

Description:

Properties:

Categories:

Default UOM:

Value Type:

Value:

Data Reference:

Settings...

## Elements

Event Frames

Library

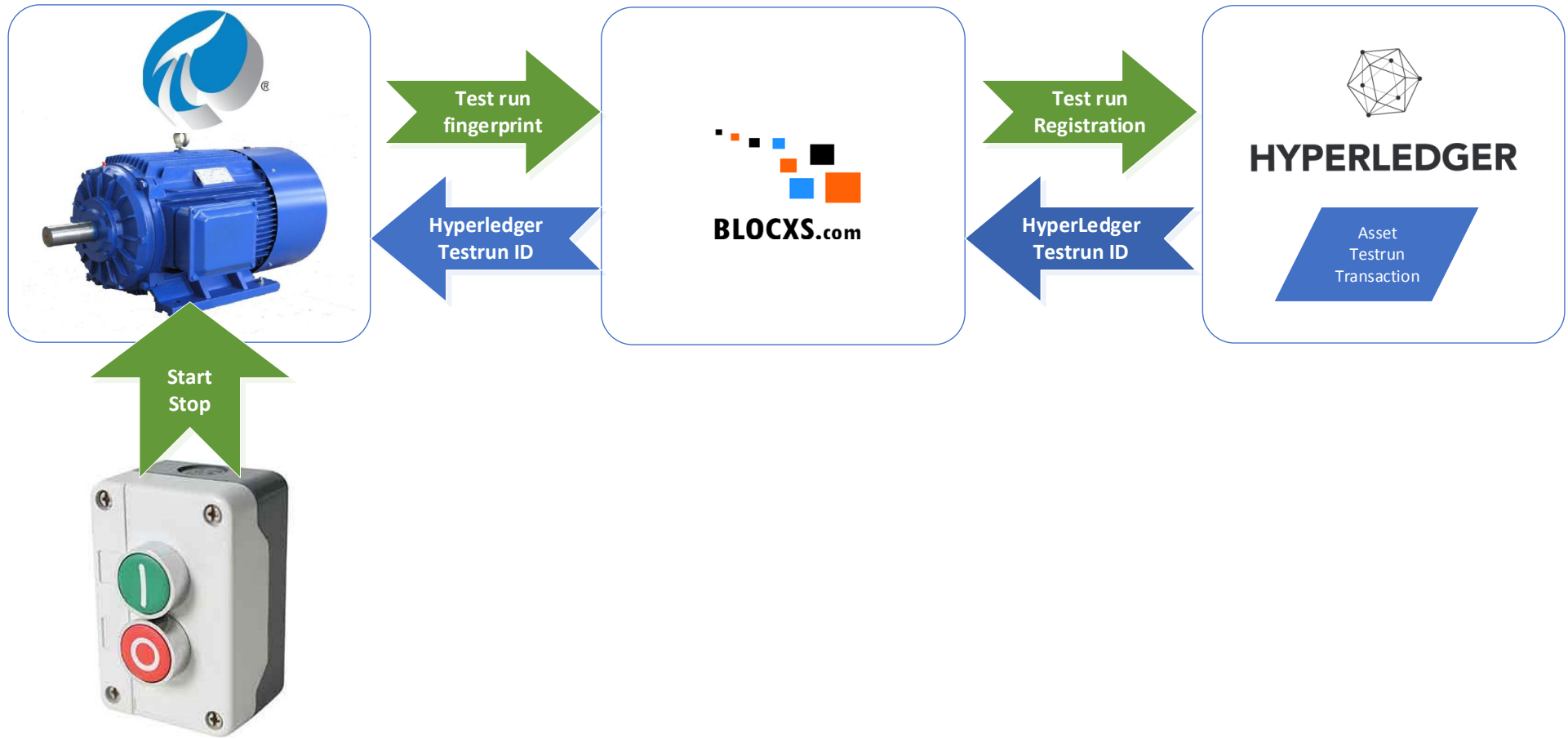
Unit of Measure

Contacts

Management

HyperledgerID

Limits [Forecasts](#)



## Case 2: Testrun registration

## Elements

- Elements
  - Assembly
    - Motor 1
    - Motor 5
    - Motor 6
  - Manufacturer
  - Plant
  - Element Searches

## Motor6

General Child Elements Attributes Ports Analyses Notification Rules Version

Filter

	Name	Value
	HyperledgerID	String Array
	ID	5030097e-09d2-49dc-8dce-38a35de0973e
	RPM	PI Point not found 'Motor6.RPM'.
	Speed	224.780944824219 rpm
	Temperature	59.2616157531738 °C
	TestStatus	UNTESTED
	Vibration	59.4759178161621 Hz

Name: HyperledgerID

Description: Identification of asset on HyperLedger

Properties: <None>

Categories: Blocks

Default UOM: <None>

Value Type: String Array

Value: String Array

Data Reference: <None>

Settings...

## Elements

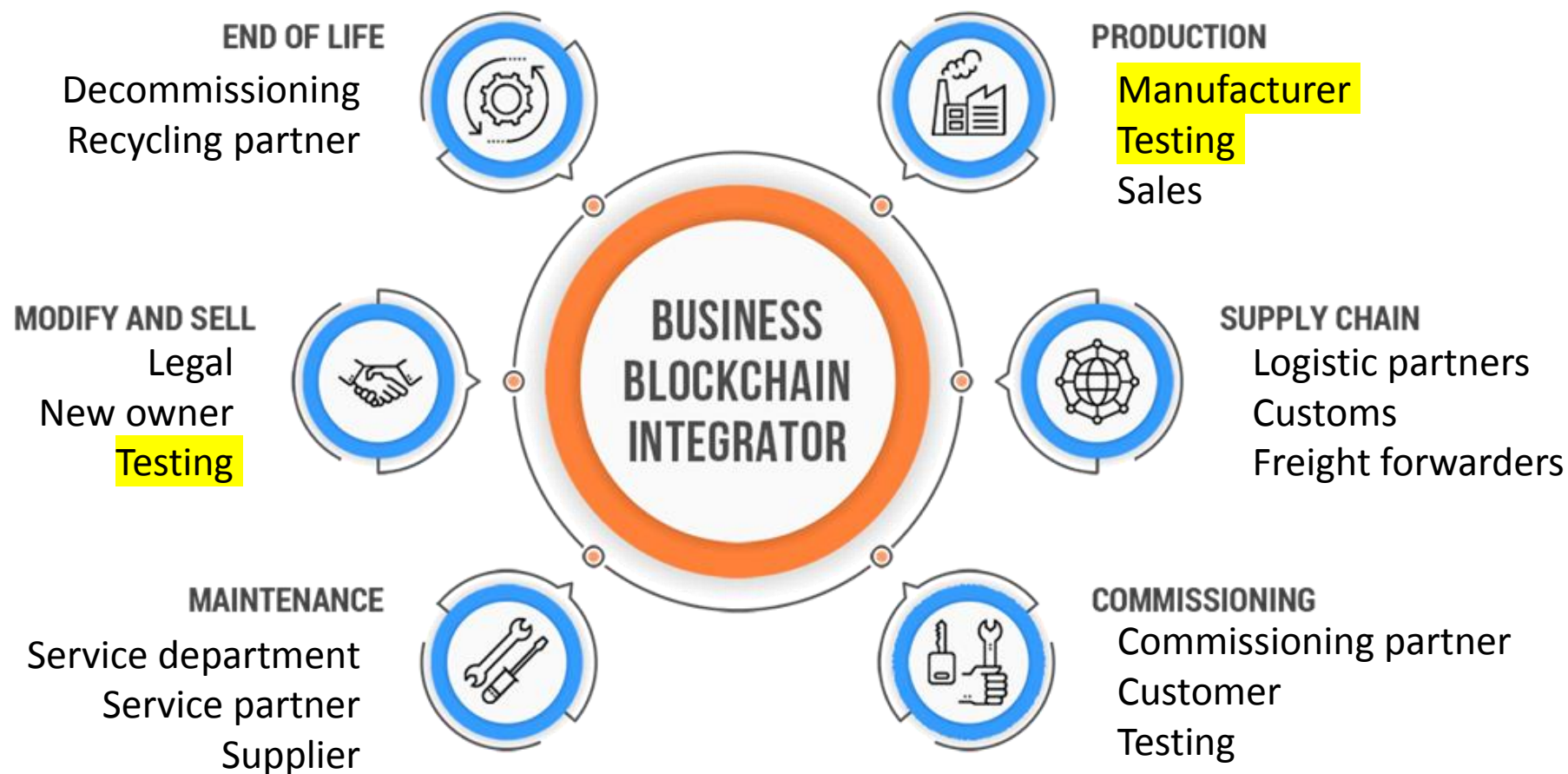
- Event Frames
- Library
- Unit of Measure
- Contacts
- Management

7 Attributes

Limits Forecasts



# ASSET LIFECYCLE IN A NUTSHELL - RECAP



YES NO

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# INTERESTED TO TALK MORE?

- Come visit us at the [Academia/Research booth](#) at the expo
- [Day 3](#), Developer Track 3 ([2:30PM – 4:15PM](#)):
  - Deep Dive: *Exploring Blockchain Applications with OSIsoft Research*

## Questions

Please wait for the  
**microphone** before asking  
your questions

State your  
**name & company**



## Please remember to...

Complete the Online Survey  
for this session

Thank you! Let's *blockchain*!

