



Industrial Internet In Flanders (3IF)

industrial
internet
In flanders

Industrie 4.0
Industrial IoT



The Industrial Internet explained


The Industrial Internet is all about machines talking to machines talking to still more machines that analyse and optimise data so that they can perform better. All this has become reality today.




Factories grow progressively more efficient in their manufacturing by collecting, analysing and applying production data.



Houses use less energy because of smart thermostats, keep safe through remote security services and let the waste management know when to empty the trash bins.



Cars break down less because of continuous self-analysis. They know when it's slippery, give advice on how to avoid traffic jams and intuitively save fuel over time.



Hospitals know and serve their patients better by equipping them with smart wristbands that enable the tracking of their individual medical histories and needs.



Smart personal devices keep the user connected to everything, gather data on her activities and help her use the information to her own advantage.



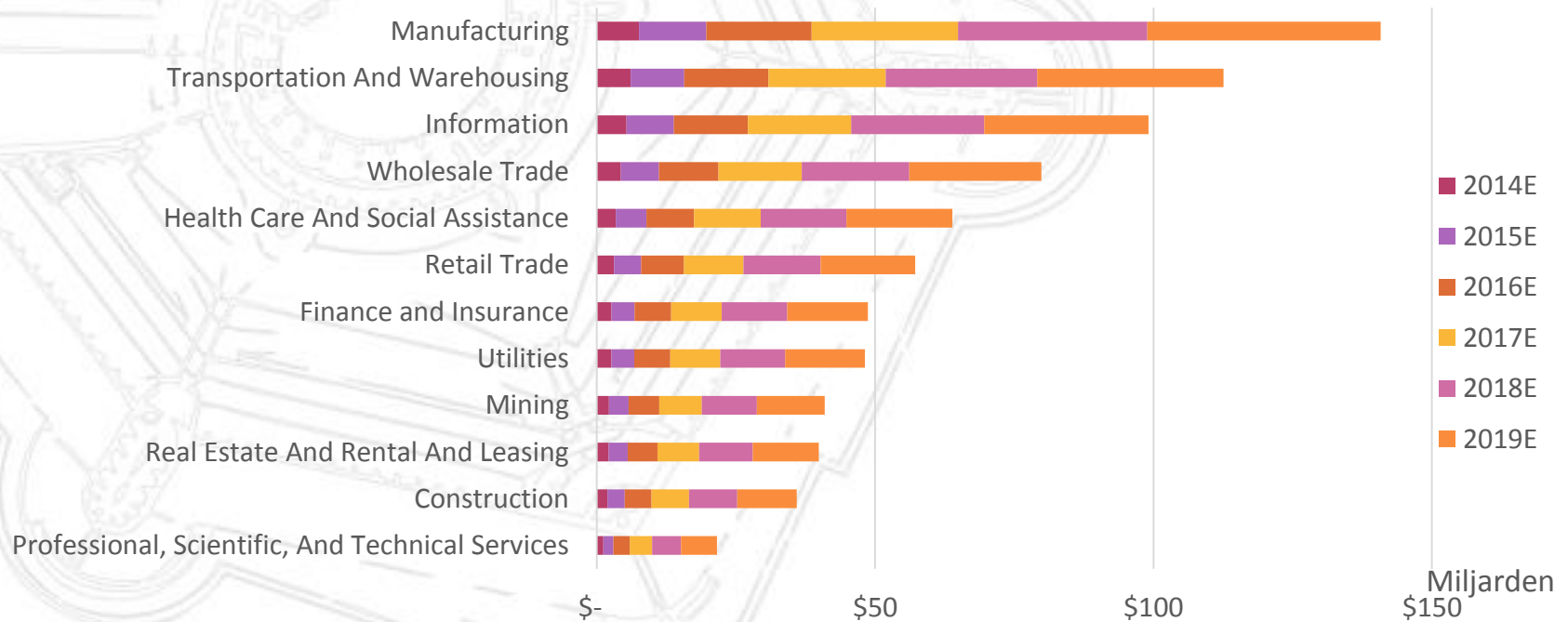
Giant container vessels' operations are optimised through smart systems that enable more efficient loading and off-loading processes allowing them to keep tighter shipping schedules.

**The next big thing
will be a lot of small things.**



... manufacturing to lead, logistics early adopter

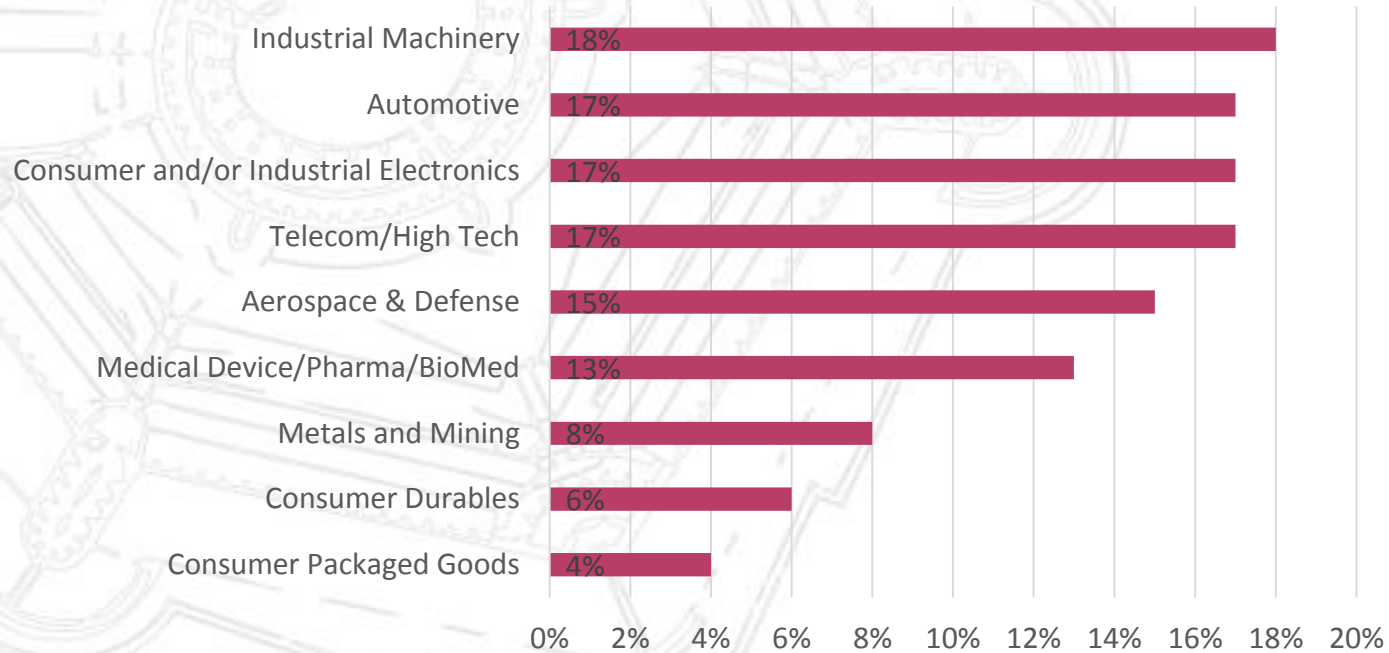
Top Industries With Investments In IoT Solutions



Source: BI Intelligence, 2015

... and in manufacturing ...

Which Industries Are Early IoT Adopters?



Source: BI Intelligence, 2015

3IF Activities Focus

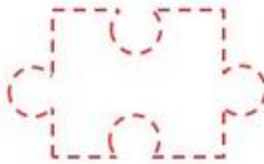


73%

OF COMPANIES
HAVE NOT
MADE CONCRETE PLANS
FOR THE INDUSTRIAL INTERNET



MANY COUNTRIES HAVE
INSUFFICIENT
CONDITIONS
TO SUPPORT
WIDESPREAD ADOPTION



DATA STANDARDS
ARE LARGELY PROPRIETARY,
WORKS-IN-PROGRESS,
OR NON-EXISTENT



36%

OF EXECUTIVES SAY
SYSTEM BARRIERS
BETWEEN DEPARTMENTS
PREVENT
COLLECTION &
CORRELATION OF DATA



59%

OF IT PROS SAY THEY
HAVEN'T STARTED
PREPARING
FOR THE EXPECTED
DATA INCREASE



URGENT NEED
TO REFOCUS EDUCATION
TO PREPARE FOR THE UPCOMING
DIGITAL WORKPLACE



RESEARCH INTO
THE INDUSTRIAL INTERNET
HAS ONLY EXISTED
IN THE PAST 3 YEARS

3IF Main Themes & Audiences

Explore, Evaluate, Transform:

1. Explore the concept of Industrial Internet, Industrie 4.0 and Industrial Internet of Things
2. Evaluate the opportunity, relevance and impact at company level
3. Transformation & Innovation Support

Beneficiaries:

1. Manufacturers
2. Suppliers: Industrial Automation Service & Technology Providers, System Integrators, Cyber Security Companies....etc.

Main Objectives

- 1. Stimulate** (economic) developments of industrial internet, industrie 4.0 and IIoT in Flanders, and support the viability of the Industry
- 2. Support** manufacturers and their suppliers to fully benefit of the technological opportunities ahead
- 3. Connect** suppliers with users of technology
- 4. Create** a Flanders powerhouse, with export opportunities to other countries
- 5. Support** other initiatives/ Factory of the Future – Madedifferent

3IF activities

1. Support development of **industrial internet in Flanders**
2. **Promote** expertise and use cases in International Fora
3. Developing a **knowledge platform** on industrial internet in Flanders
4. Identification of the eco system and **organising knowledge exchange**
5. Development of industrial internet **transformation models** : roadmaps, evolution plans for manufacturing in various sectors, aimed at different departments
6. Development of **self-assessment tools**
7. **Detecting requirements and challenges** of partner- and target group companies
8. **Assistancen Advisory and Support services** for companies indicating interest in transformation
9. **Support in intellectual property protection** in manufacturing against abuse and data theft.
10. Analyzing and clarifying **sector specific needs** versus collective requirements
11. **Support** to the development of the **Factory of the Future – Madedifferent** with the 3IF industrial internet specialization.

1. Knowledge Platform

The screenshot displays the BIF KennisBank website interface. At the top left is the BIF .be logo. The navigation menu includes Home, Partners, Events, Contact, Register, KennisBank (with a dropdown arrow), and Nieuws & Achtergrond. The main content area is divided into three sections:

- Left Section:** Three images related to industrial automation. The top image shows a factory floor with the text "industriële automatisering". The middle image shows a network switch with the text "industriële automatisering". The bottom image shows a factory floor with the text "industriële automatisering".
- Center Section: DOCMAN - DOCUMENTEN**
 - Roland Berger digital transformation of industry 20150315 **Nieuw**
 - WorldEconomicForm WEFUSA IndustrialInternet Report2015 **Nieuw**
 - Accenture Industrial Internet of Things Positioning Paper Report 2015 **Nieuw**
 - 150410 Umsetzungsstrategie 0
 - The IoT security solution set
 - Endian Switchboard explained
 - Endian Switchboard
 - Flyer Industry 40 forum 2014
 - Accenture fy14 technology labs report
 - Internet of Things and future of manufacturing
- Right Section: NIEUWS & ACHTERGROND**
 - Reference Architecture Model of Industrie 4.0
 - McKinsey Industry 4.0, May 2015 - how to navigate a changing industrial landscap

At the bottom left, the "KennisBank" section states: "In de KennisBank worden verschillende documenten, publicaties, referenties en andere relevante materialen". At the bottom right, there is a "3IF ON TWITTER" section featuring a tweet from "Internet of Things @IOT_RR" dated "22 mei".

2. Promoting Expert Network

3IF Home Meer Activiteiten Events Register KennisBank Nieuws & Achtergrond

ExpertenNetwerk

Dashboard

SEARCH Hide

Choose Keyword:
advanced manufacturi · search

STATISTICS Hide

Statistics Graph Hide

Expert	Expertbedrijf	Expertise	Document
13	28	0	2

Statistics List Show

ALL EXPERTEN (13) Show

ALL EXPERTBEDRIJVEN (28) Show

3IF Home Meer Activiteiten Events Register KennisBank Nieuws & Achtergrond


ExpertenNetwerk

NIEUWS & ACHTERGROND

- 2016-02-08: 3IF & IoTBE: Predictive Maintenance
- 2016-04-12: Transformatieworkshop 3: Hands on Industrial Internet of Things
- 2016-04-14: Transformatieworkshop 4: MES to I40
- 2016-01-01: IIoT in 2016 en de nabije toekomst
- 2015-10-28: Malware Duuzer richt zich naar Manufacturen

Show Expertbedrijf

DETAIL Hide



Research Institute: GE AUTOMATION INTELLIGENT PLATFORMS
Callname: GE INTELLIGENT PLATFORMS

Description: GE is a leading provider of automation and controls technology and services for power generation, distribution and adjacent applications across industry. Our differentiated industrial internet solutions enable customers to optimize equipment performance and ensure reliable and efficient operations by connecting their machines, data, insights and people. Our dedicated team includes some of the best minds in automation capable of solving our customers' toughest challenges. GE Industrial Internet: Our Industrial Internet Maturity Model provides a solid solution path toward optimization. You can understand where your business is today in terms of adopting the Industrial Internet and determine where you want to be in the future. And hence, you can align the steps you are going to take with the right solutions that help you meet your business objectives. Learn more about the five steps that build on each other to help you reach performance optimization: Connect | Monitor | Analyze | Predict | Optimize

Street + Number: Memminger Strasse 14
Postalcode + city: 86159 Augsburg
Country: Germany
Office Phone: 003251620270
Fax:
Email Address: Wesley.Vandewalle@ge.com
Website: http://www.geautomation.com/industrial-internet

Science Department:
Group research institute:
Division:
Rating: 1
ICT security industry: +
ICT security institute: +

Edit

3IF ON TWITTER

Tweets door @3IFconsortium

3IF @3IFconso... prediction nr 1 for 2016 already happening : more cyber attacks on industrial control systems news.trust.org/item/20160113...

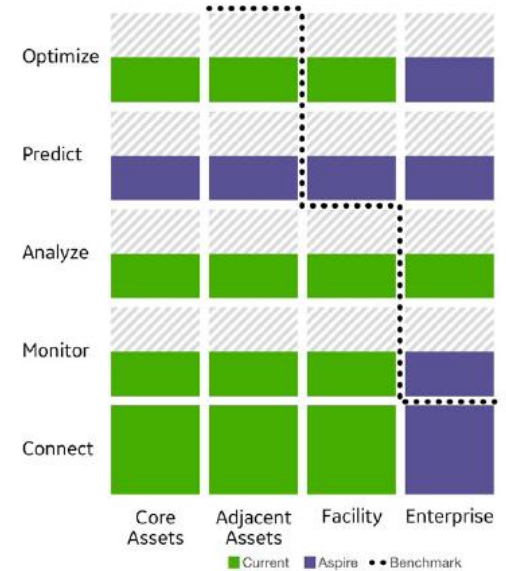
3IF @3IFconso... many manufacturers don't realize they already have data assets which can

Insluiten Weergeven op Twitter

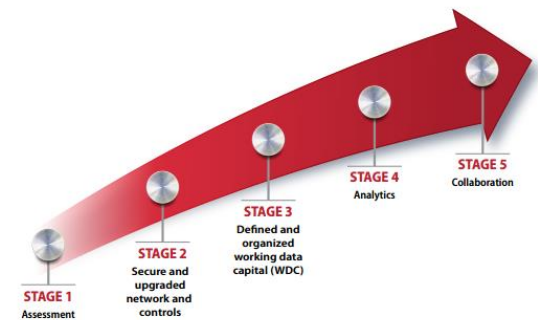
3. (Self)-Assessments

1. Surveys
 1. Online enquête
 2. PDF enquête
2. Online introductie assessment
 1. Industrial Internet Maturity Model (GE)
 2. Connected Enterprise Maturity Model (Rockwell)
1. Diepte – interviews
 1. On Site Interview op afspraak
 2. Peer Group interview
 3. Use case interview

Where do you rank in the Industrial Internet journey



Source : GE Automation, 2015



Source : Rockwell, 2013

4. Transformatie (Workshops)

1. **Inspiratieseminar** industrial internet, industry 4.0, industrial IoT en aanverwanten,
2. **Inspiratieseminar** industrial internet, industry 4.0, industrial IoT en aanverwanten,
3. Inspiratie Workshop 2 : **manufacturing – use cases**,
4. Inspiratie Workshop 3 : **Data Science, MES, Mobile, Application domain specific**,
5. Workshop 4 : **Transformation methodology**
6. Workshop 5 : **Best practices** (Subnets of things, Cloud, Connected Asset Lifecycle Management, Overall Equipment Effectiveness, Servitization, ...)
7. Bi-annual event

Transformatie Workshops - planning

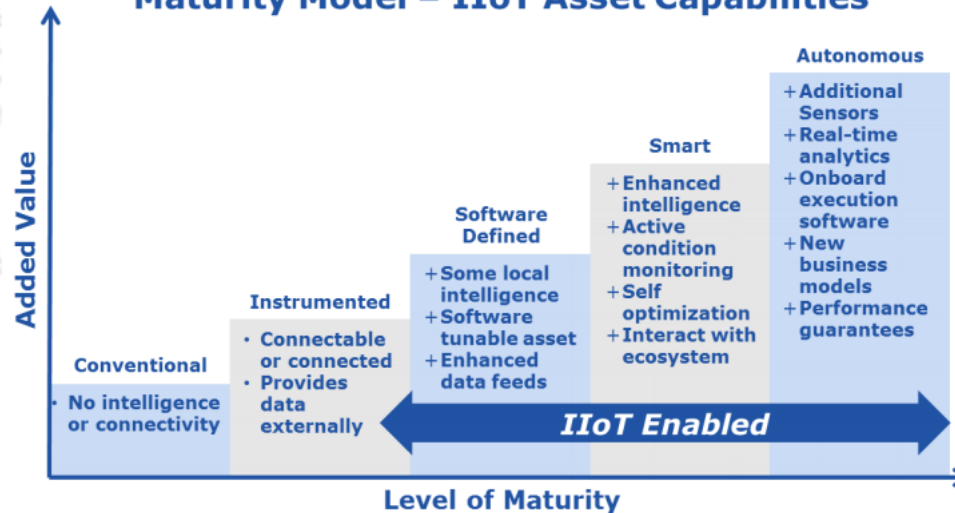
1. Inspiratie Workshop 2 : Manufacturing technology transformation, OPC UA vs Industrial Internet

OPC Unified Architecture

Interoperability for Industrie 4.0 and the Internet of Things



Maturity Model – IIoT Asset Capabilities



Transformatie Workshops

2. Workshop 3 :

- Scripting the Internet of Things (RPi, BBB, Arduino, ...)
 - Bouwen van sensoren en things op basis van betaalbare pakketten
 - Welke pakketten
 - Eerste stappen
 - Op weg met Github en andere Open Source tools
 - Installeren en leren
- Proof of concept model uitwerken en business case support
- GPIO programming in Linux
- Reactive programming.
- Node.js and Cloud 9
- Frameworks: NodeRed, Johnny5, MH, ...

Transformatie Workshops


3. 14.04.2016 : Inspiratie Workshop 4

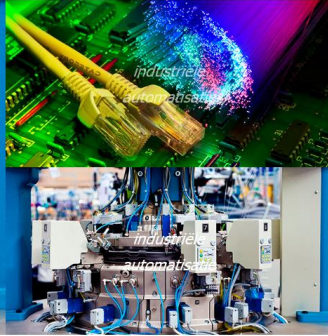
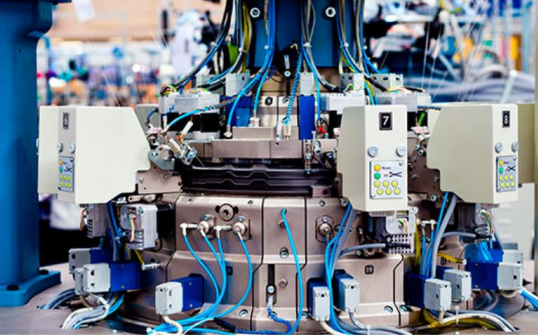
- Manufacturing Execution System towards Industrie 4.0 – Industrial Internet
 - Mark Van Pee, Sirris : overzicht
 - Ulrich : Industrie 4 interact / cloud MES
 - BrightEye
 - Objective (De Clercq Solutions)
 - Robex & Proficy Suite (GE)
 - Wonderware (Schneider)
 - Simatic
 - Scheider Invensys – Microsoft Azur



- Wat zijn de huidige mogelijkheden (en moeilijkheden) van MES Systemen
- Op welke manier bieden ze een oplossing naar uitdagingen voor Industrie 4.0, kunnen ze een tussenoplossing bieden, een meerwaarde
- Kunnen organisaties sneller van start gaan met Industrie 4.0 op basis van MES?

May 25, 2016: 3IF & Agoria International Conference




Home Meer Activiteiten Events Register KennisBank Nieuws & Achtergrond BD




NIEUWS & ACHTERGROND

- 2016-02-08: 3IF & IoTBE: Predictive Maintenance
- 2016-04-12: Transformatieworkshop 3: Hands on Industrial Internet of Things
- 2016-04-14: Transformatieworkshop 4: MES to I40
- 2016-01-01 IIoT in 2016 en de nabije toekomst
- 2015-10-28 Malware Duuzer richt zich naar Manufacturen

2016-05-25 : 3IF & AGORIA CONFERENCE: INTERNET OF THINGS & DIGITAL TRANSFORMATION FOR INDUSTRY





No future without technology


3IF & AGORIA CONFERENCE: Industrial Internet, Internet of Things and Digital Transformation for Industry:


Program is still under development. Seats are limited, make sure that you pre-register using the eventbrite link here


Over the last 200 years, the world has experienced several waves of innovation. The Industrial Revolution saw innovations in technology applied to manufacturing. The Internet Revolution allowed machines to connect and exchange information. The two combined have set the stage for the next wave, that we are calling the "Industrial Internet", or Industrial Internet of Things" (IIoT). This last wave pushes the boundaries of machines and will drastically increase

3IF ON TWITTER

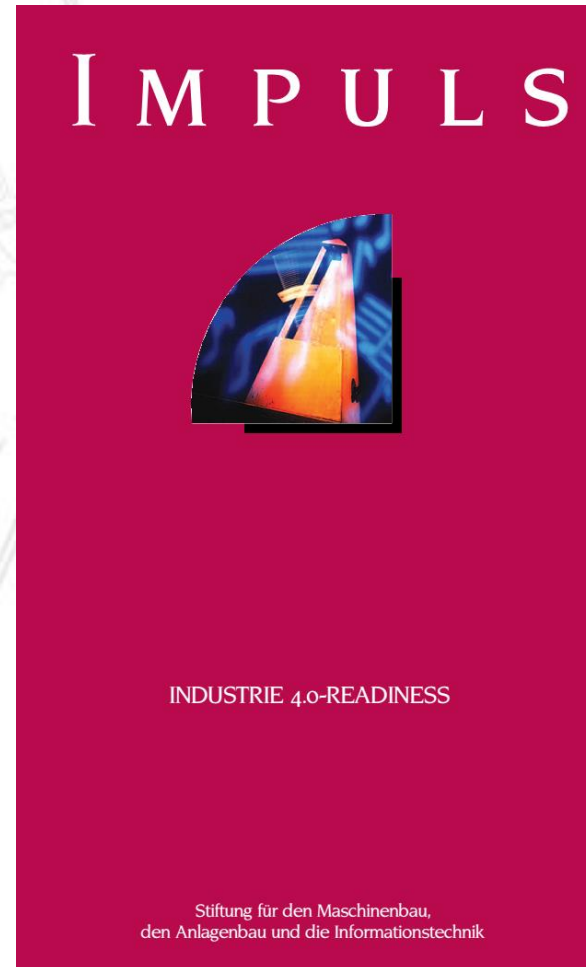
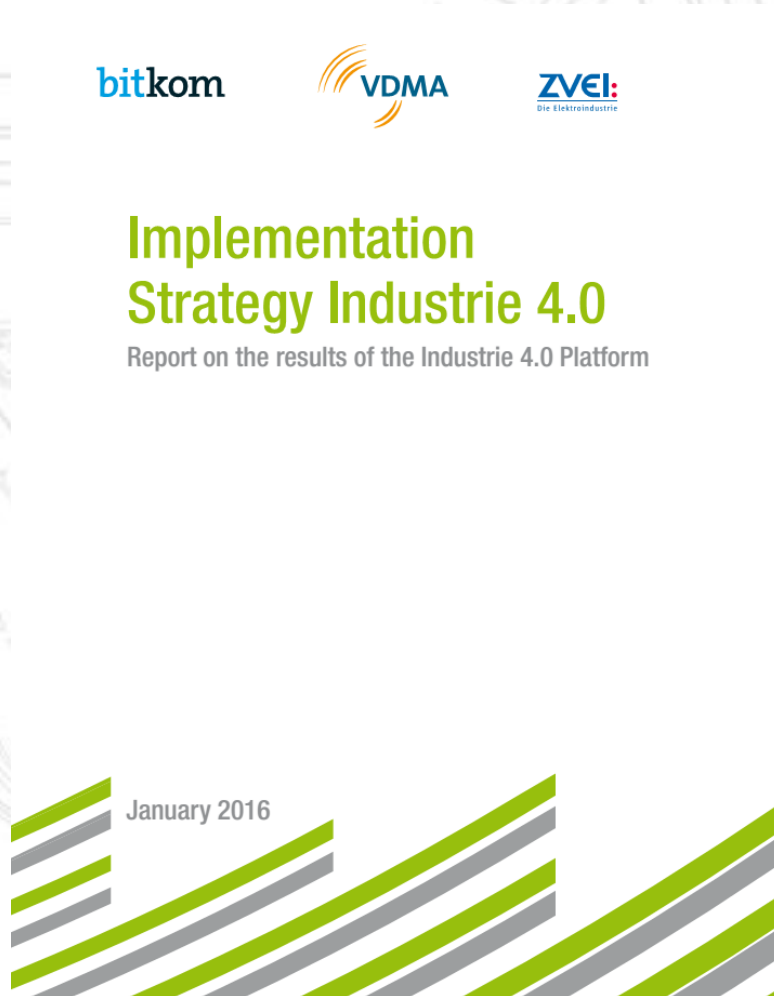
Tweets Volgen

 **3IF** @3IFconsortium 15 januari
prediction nr 1 for 2016 already happening : more cyber attacks on industrial control systems news.trust.org/item/20160113...

 **3IF** @3IFconsortium 11 december
many manufacturers don't realize they already have data assets which can serve first steps to a digital factory twitter.com/Industry40/sta...

 **3IF** @3IFconsortium 21 september
[#IoTclan](https://twitter.com/3IFconsortium) @Airbus jean bernard hentz demonstrating the live riveting of the future airbus planes on @Raspberry_Pi pic.twitter.com/2a4QWdKc1

4. Monitoring Major Developments

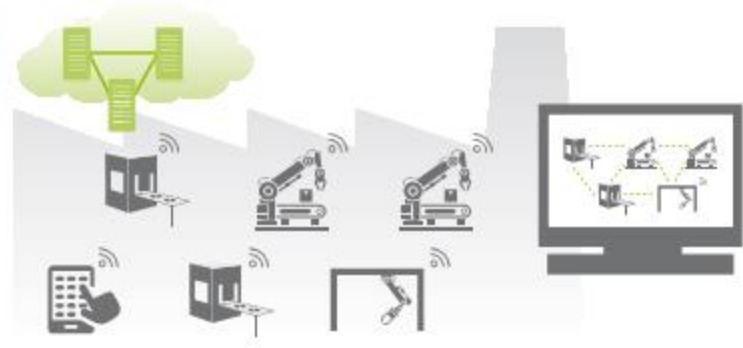


4. Monitoring Major Developments

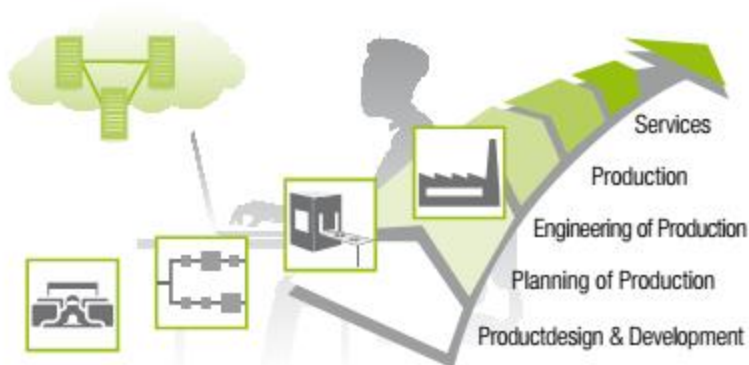
Horizontal integration via value-added networks



Vertical (integration and networked production systems)



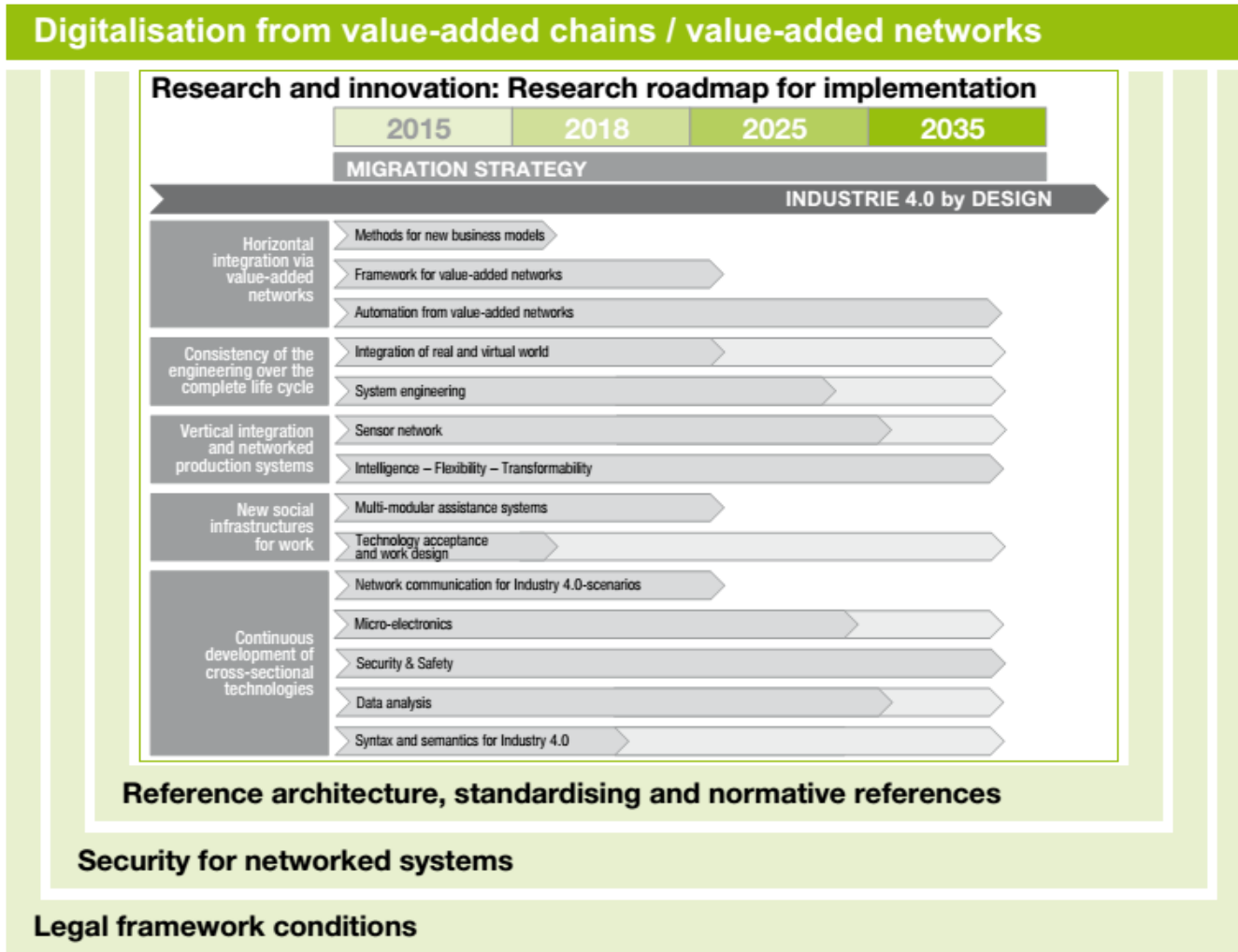
Digital consistency for the engineering throughout the whole value-added chain



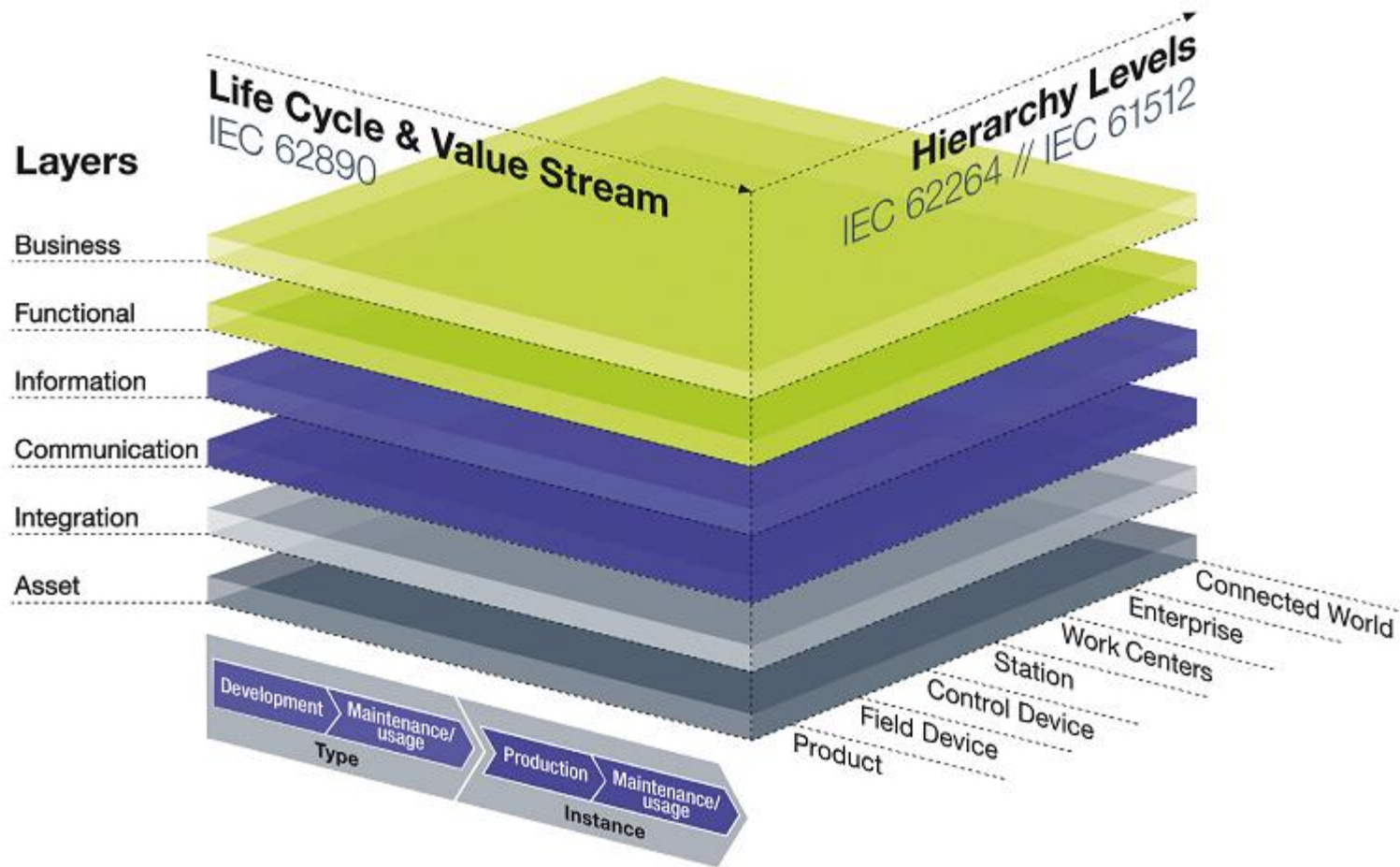
The human being as a conductor for added value



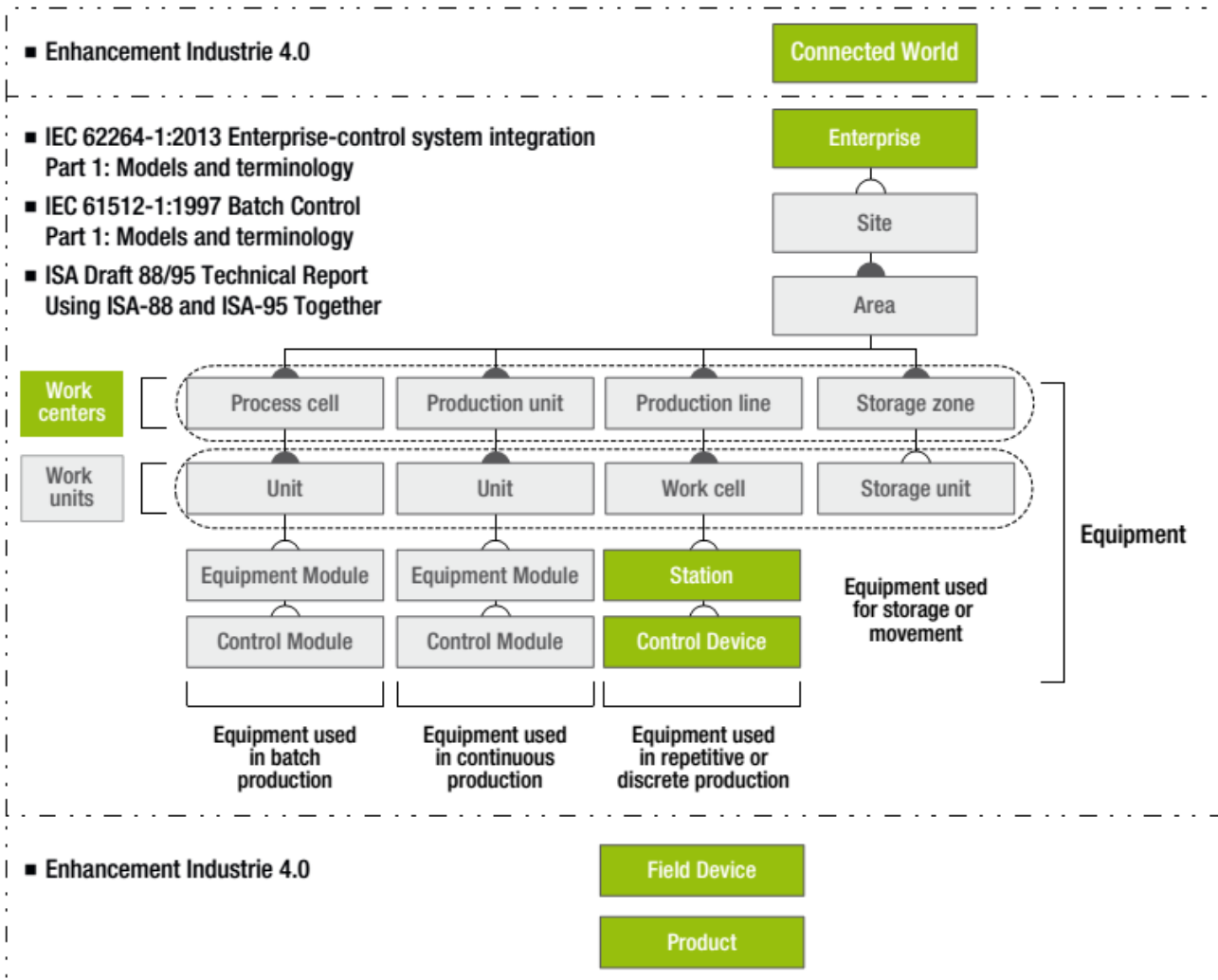
4. Monitoring Major Developments



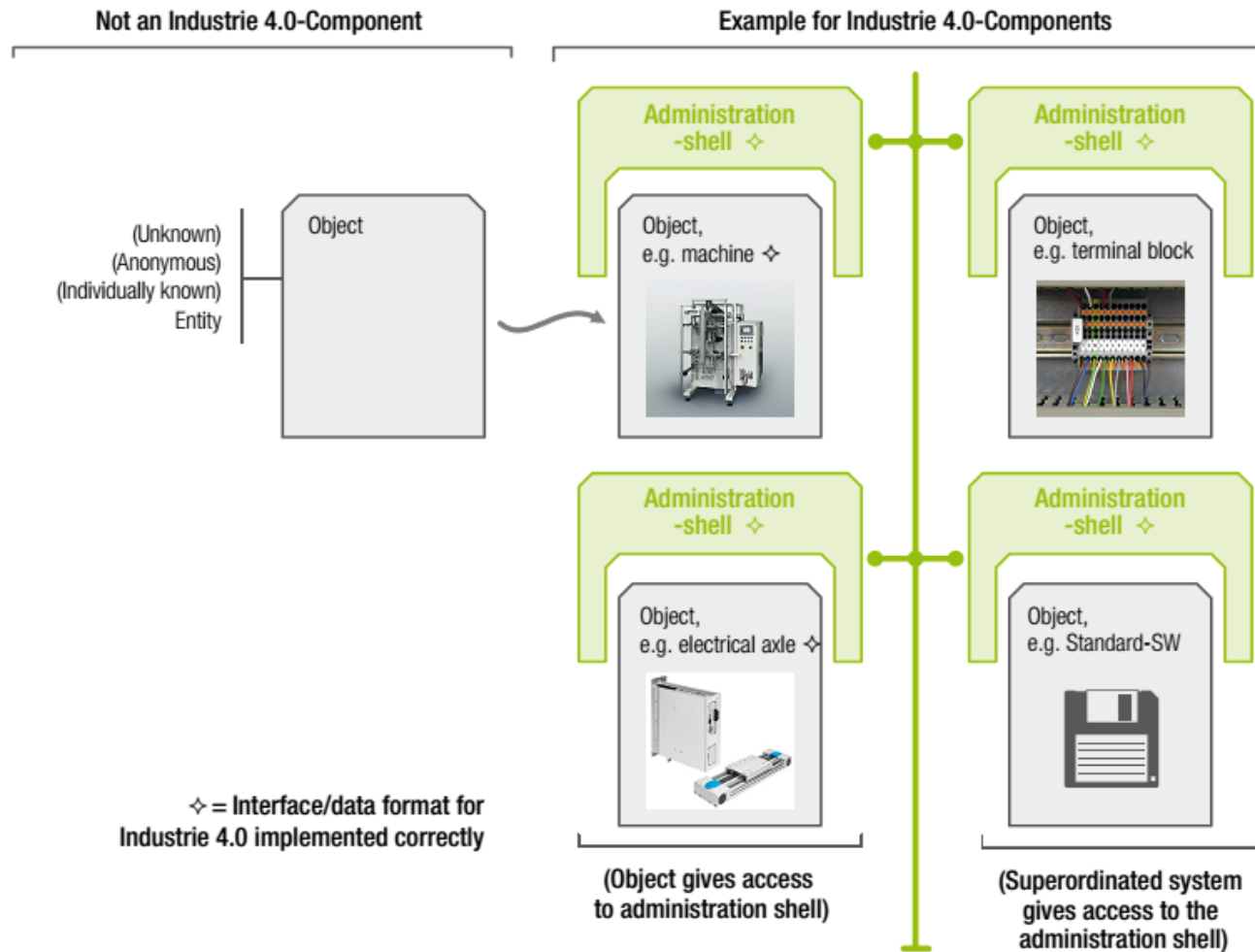
4. Monitoring Major Developments



4. Monitoring Major Developments



4. Monitoring Major Developments



Industry/y 4.0 & Security

1. Significant developments

1. Industrie 4.0

2. Industrial Internet

3. IoT

4. (NIST CPS) Cyber Physical Systems Cybersecurity

Security Control Editor | Cyber Framework Browser | Framework Profile | Cross References

Baselines: LOW MODERATE HIGH N/A [Default](#)

Priorities: P0 P1 P2 P3 [Default](#)

Restrict controls to Framework Profile informative references:

Control family: IDENTIFICATION AND AUTHENTICATION

Control: IA-3: DEVICE IDENTIFICATION AND AUTHENTICATION

[Framework Cross Subregions Reference \(IA-3\)](#)

CONTROL NUMBER	CONTROL NAME Control Enhancement Name	BASELINE IMPACT	ADDED SUPPLEMENTAL GUIDANCE	CONTROL BASELINES		
				LOW	MODERATE	HIGH
IA-3	DEVICE IDENTIFICATION AND AUTHENTICATION	LOW	<input checked="" type="checkbox"/>	Added	Selected	Selected
IA-3(1)	CRYPTOGRAPHIC BIDIRECTIONAL AUTHENTICATION	MODERATE	<input checked="" type="checkbox"/>	Added	Added	Added
IA-3(3)	DYNAMIC ADDRESS ALLOCATION	N/A	<input type="checkbox"/>			
IA-3(4)	DEVICE ATTESTATION	HIGH	<input type="checkbox"/>			Added

XML representation:

Additional Supplemental Guidance:

Control Enhancement (1) Additional Supplemental Guidance:

Rationale for changing the baseline:

NOT THE END

More information, slides and follow-up

www.lsec.eu

www.3if.be - [.eu](http://www.3if.eu)

Club **R2GS**

CSA cloud
security
allianceSM

Q or C

Ulrich Seldeslachts
ulrich@lsec.eu
+32 475 71 3602



agentschap voor Innovatie
door Wetenschap en Technologie



Flanders Investment & Trade
Government of Flanders - Belgium