Industrial between International Standardization
"The essence of Industrie 4.0 is IxT"

ISO 13584-42 ensures interoperability

1

History of a Industrial Revolution

Review of Industrial Revolution

- The boundary between reality and virtual is gradually becoming fuzzy.
- Networking of devices equipped with sensors and control functions has evolved along with the development of things.
- Industry 4.0 is the new stage of the Industry.It is a Sharing of the semantic information.
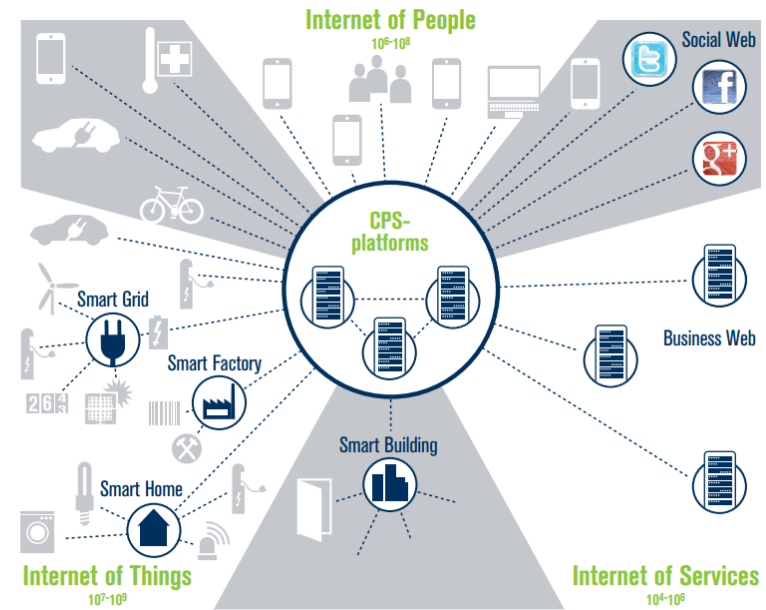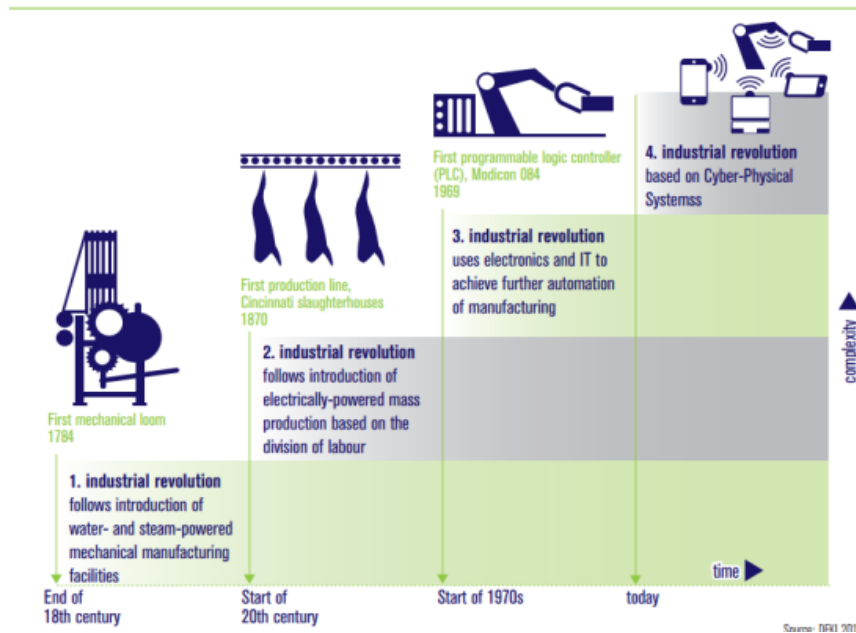
Post → phone → network →Improve efficiency

(Fig From Plattform Industrie 4.0)

Sharing of the semantic information will be Improve efficiency.

IxT (IT,ICT and IoT) What have been brought? (First)

· There was a separate medium for each.

· In the 1980's had a multimedia.

· The media is replaced by the Internet.

And now,

　Information sharing is promoted through efficiency improvement.
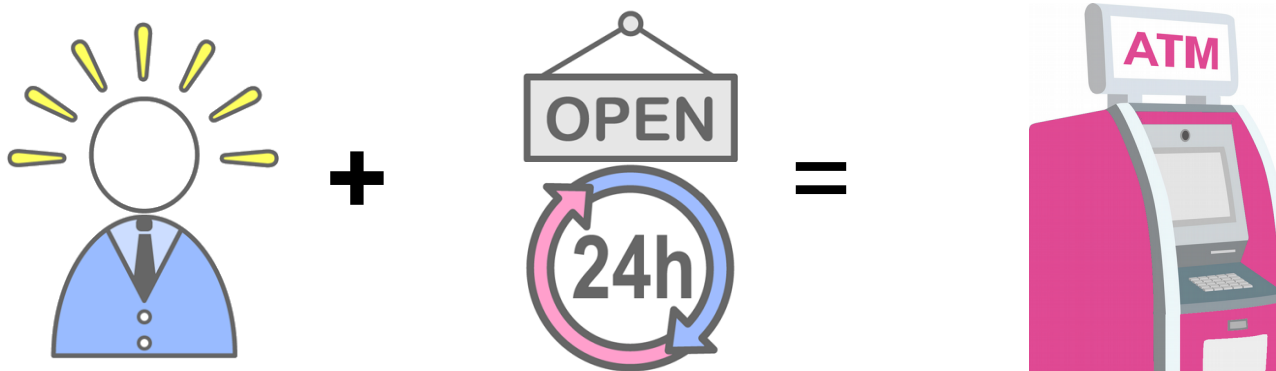
Separate medium for each　　　Multimedia　　　　Information sharing

IxT (IT,ICT and IoT) What have been brought? (Second)

・Information sharing eliminates the barriers of different industries.

・Convenience stores departing from the retail industry now operate the banking industry.

There is no future for companies that have lagged behind information sharing.

Conventional work will replaced with equipment such as a machine.

What have been brought?　In case of Japan.

・When passing through the automatic ticket gate dedicated to the Shinkansen, the information on the designated seat described on the ticket is transmitted to the mobile information terminal of the Train crew,so that the usage situation of the designated seat can be grasped on the terminal.

・can reserve and change the tickets by Internet.

・can sell vacant seats to new passengers by tickets returning.

Information sharing creates new business opportunities.

2

World Activities

PLATTFORM INDUSTRIE 4.0

I4.0(DIN,EU)

Industrie 4.0 is one of the future projects adopted in the „Action Plan High-tech strategy 2020". The Federal Government thereby adressed the rapid social and technological development in this area and put structures for cooperation between all actors of innovation in Germany.

What is Industrie 4.0?

- The Plattform Industrie 4.0 is supported by politics, business, science, associations and unions. Currently (February 2017) the following companies and institutions are active in the platform.
- Bundesverband Informationswirtschaft, Telekom-munikation und neue Medien e. V. (Bitkom)
- Verband Deutscher Maschinen-und Anlagenbau e. V. (VDMA)
- ZVEI -Zentralverband Elektrotechnik-und Elekt-ronikindustrie e. V.
- Federal Government of Germany
- Umsetzungsstrategie Industrie 4.0
- Implementation Strategy Industrie 4.0

(Fig From Plattform Industrie 4.0)

The Industrial Internet Consortium is a global, member-supported, organization that promotes the accelerated growth of the Industrial Internet of Things by coordinating ecosystem initiatives to securely connect, control and integrate assets and systems of assets with people, processes and data using common architectures, interoperability and open standards to deliver transformational business and societal outcomes across industries and public infrastructure.

Membership in the Industrial Internet Consortium is open to any company. Our members represent large and small industry, entrepreneurs, academics and government organizations with an interest in helping to shape and grow the Industrial Internet.

FOUNDING & CONTRIBUTING MEMBERS

BOSCH Invented for life   EMC²   GE   HUAWEI   intel

IBM   SAP   Schneider Electric

Business Strategy & Solution Lifecycle   Liaison   Marketing

Security   Technology   Testbeds

MADE IN CHINA 2025

- "China Manufacturing 2025" is the plan for the first 10 years in the long-term plan formulated by the State Council of China in 2015.

- The outline of China manufacturing 2025 is introduced with the number "1, 2, 3, 4, 5,10".

  1:Manufacturing power country,

  2:"Informationization" and "Industrialization"

  3:2025,2035,2049,

  4:Four principles,

  5:Five projects (construction of manufacturing innovation center, strengthening of industrial base to strengthen the foundation of manufacturing industry, smart manufacturing, green manufacturing, high-end equipment innovation)

  and 10: priority areas.

- In October 2014, announced the "China and German Cooperation Action Principles", signed a memorandum at Industrie 4.0.

中国制造2025 "一二三四五五十"

相关解读

PLATTFORM INDUSTRIE 4.0

COOPERATION

Sino-German Cooperation on Industrie 4.0

Midea   KUKA YOUNG POTENTIAL AWARD

CEN WORKSHOP AGREEMENT 2010

The following companies/organizations endorsed the CWA:

- AFIM (France)
- CNCTST (China)
- DIN e.V. (Germany)
- ECCMA (USA)
- eCl@ss – International Classification System (Germany)

Why No Japan , What does it mean?

So,the world have been like this!

- The progress of IxT at Industrie 4.0 will changing the global manufacturing environment.
- The trend of the world is IxT at Industry 4.0.
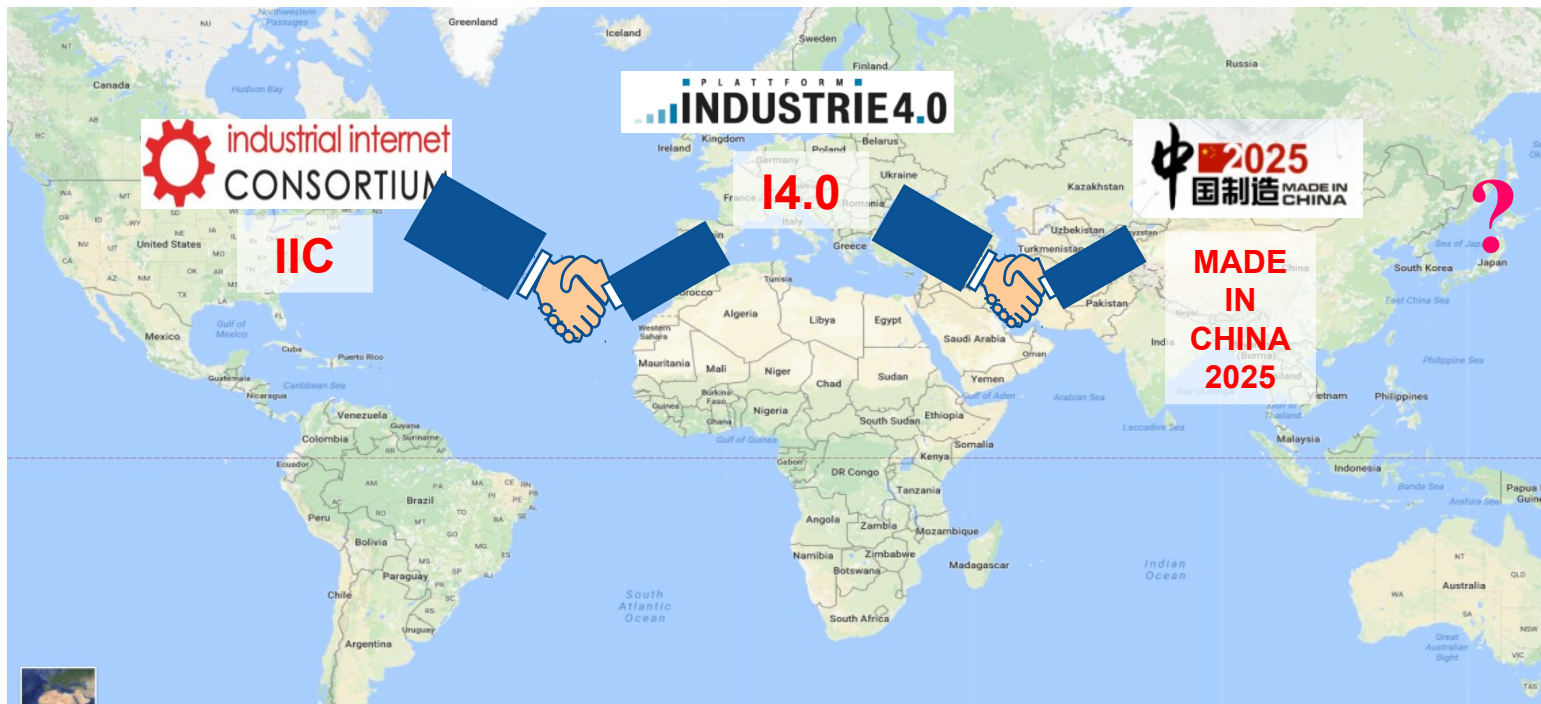
3

Standard for Informatization

Industrie 4.0

Promotion of the European Organization

ISO13584-42

Information sharing by meaning

world wide network

The essence of Industrie 4.0 is IxT

Fusion of semantic information network and product network.

Methodology of Industrie 4.0

The fourth industrial revolution is to ensure the interoperability of the every information.

Continue to chapter 4

4

"The semantic information"

of Industrie 4.0

The significance to Sharing
of the semantic information.

IxT must be to

ensure the Interoperability

There is no value for information that does not have meaning.
Accident due to misunderstanding of meaning.

Interoperability of Industrie4.0

CEN：Comité Européen de Normalisation
CENELC：European Committee for Electrotechnical Standardization

IEC61360-1/2

IEC:International Electrotechnical Commission
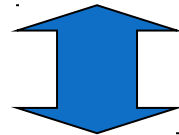
ISO13584-42

ISO: International Organization for Standardization

5

IEC 62832 "Digital Factory"

of Industrie 4.0

European standards strategy

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

IEC 62832
„Digital Factory"

Digital Factory
und
Industrie 4.0

Udo DOEBRICH – Convener
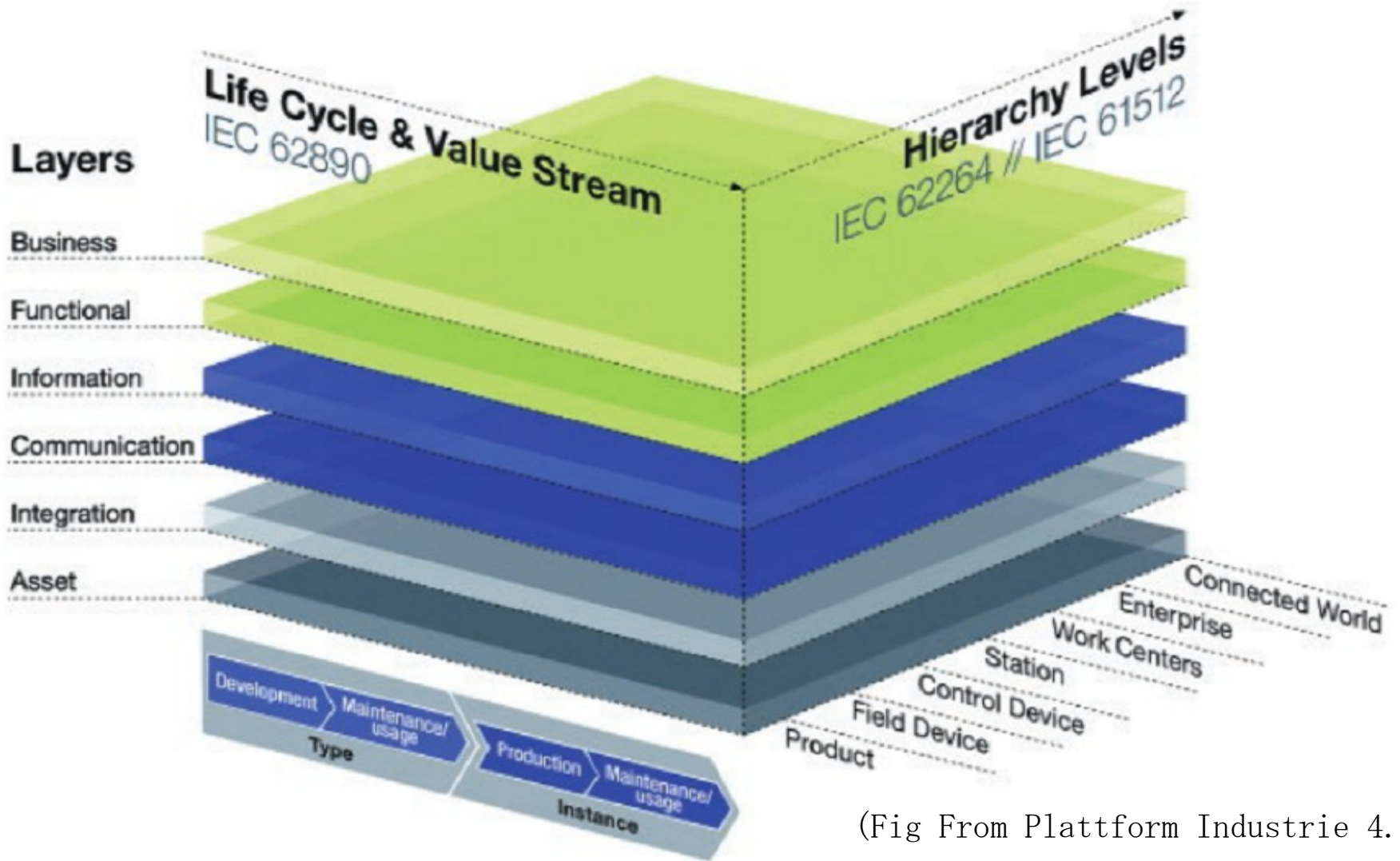
(Fig From Plattform Industrie 4.0)

This is a "three dimensional information model diagram" three-dimensionally showing the correlation of standards.

To show the scope of adaptation of the standard.
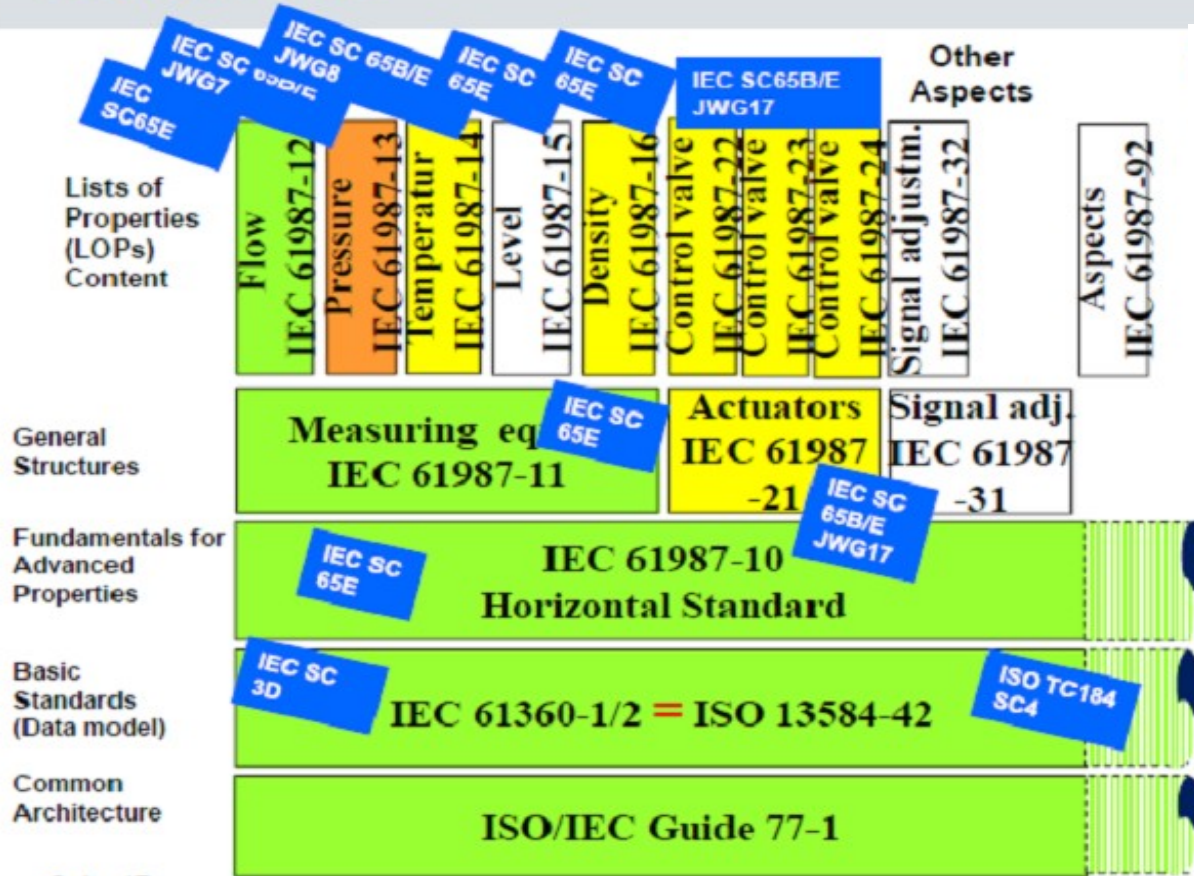
This figure shows the hierarchical representation of what kind of scene the standard is used for.
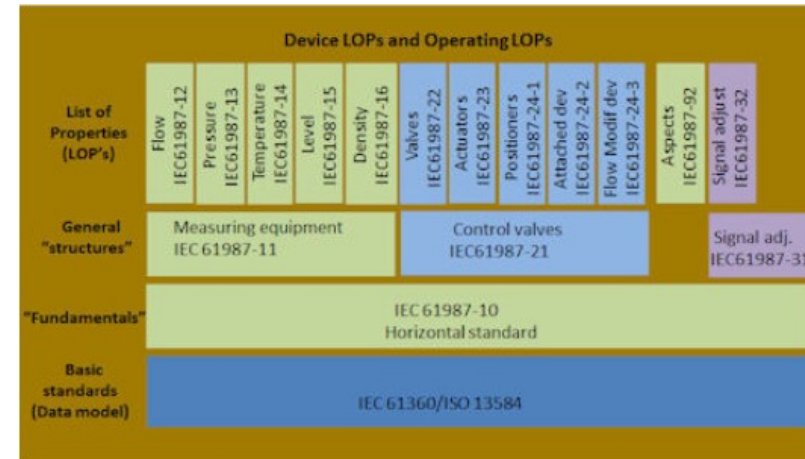
To express the inheritance relationship between standards and standards.

6

In case of etc

No discussion on interoperability

- Industry4.0 can be adapted by ensuring interoperability of all information.
- The basic idea for realizing is shown in ISO / IEC Guide 77.
- The foundation of interoperability is IEC 61360-1 / 2 And ISO 13584-42.
- You can check product specifications such as comparison of specifications and contents of assembly using the items compiled in the standard term dictionary standard according to IEC 61360-1 / 2 and ISO 13584-42.
- It is necessary to maintain the order of product information and ensure interoperability in semantic information sharing.

7

Summary

Summary

- **I**ndustry**4.0** is trying to share semantic information.
- The key to sharing semantic information is to ensure interoperability.
- Discussion on securing interoperability has not been made.
- The sharing of semantic information is established by the social infrastructure.

Industry**4.0** is the policy, planning and concerning for industrial promotion.That's for business.

Thank you very much for your browsing.

I sincerely express my gratitude.

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