Situation of Chinese Intelligent Manufacturing Standardization & International Cooperation Suggestions

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Standardization Administration of the People’s Republic of China (SAC)
Main tendency of future manufacturing development

Information technologies + Advanced manufacturing technologies push manufacturing development towards digitization, networking and intelligence.
International manufacturing is confronted with new competitions

**America**
- “Manufacturing Renaissance”
  - Establish “American manufacturing innovation mechanism”
  - Industry Internet

**Germany**
- Keep the leading position of manufacturing
- Sustainable innovation investment
  - High export level
  - Put forward “Industry 4.0” as the new strategy

**Japan**
- I-JAPAN
  - Relieved and energetic digital society
  - Hasten new vitality
  - Activate industries and regions vitality

**China**
- Made in China 2025
  - New normal of economy
  - Economy development turn to intensive increase
  - Economy structure turn to deep adjustment
  - New growth point
In China, in order to accelerate the upgrading of Chinese manufacturing and improve quality and efficiency, the State Council published “Made in China 2025”, which takes intelligent manufacturing as one of the main targets.

**Ten key areas:**

- New information technology
- Numerical control tools
- Aerospace equipment
- High-tech ships
- Railway equipment
- Energy saving
- New materials
- Medical devices
- Agricultural machinery
- Power equipment
Priority of the standardization

The Interconnection among different manufacturing processes is the key to achieve intelligent manufacturing across different industries and fields. Therefore, standardization should be put in priority for intelligent manufacturing realization. It is essential that standardization can play the great guidance and leading role for achieving intelligent manufacturing.
In December 2015, the construction guide for national intelligent manufacturing standard system was published.
Standardization works in China

Key technical standards development, verification and testing of technical specifications and standards, wide promotion in different areas.

- IM general requirement
- IM semantic and data dictionary
- IM energy efficiency requirement and evaluation
- IM quality model and on-line monitoring
- IM functional safety requirement and evaluation
- IM security requirement and evaluation
- IM devices reliability requirement and evaluation
- IM consistency and interoperability requirement

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In May 2016, the national promotion coordinating group, general group and advisory group for intelligent manufacturing standardization were established.

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<tr>
<th>Coordinating group</th>
<th>General group</th>
<th>Advisory group</th>
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<tr>
<td>SAC, MITT, SDPC, MOF,</td>
<td>Group Leader: 5</td>
<td>28 experts from: Tsinghua University, CAE, CMIF, ......</td>
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<td>MOST, CAE, CMIF</td>
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<td>Research Institutes: 21</td>
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Planning | Implementation | Suggestion
Standardization works in China

In 2015 and 2016, MIIT launched intelligent manufacturing special projects, supporting the comprehensive standards research, verification and applications in intelligent manufacturing.

In 2016, MOST starts the program of national quality infrastructures (NQI), which supports 90 standards development of intelligent manufacturing basic technologies and key technologies, as well as international standards development.
Active in international standardization work

IEC/SMB/SEG7 “Smart Manufacturing”
ISO/TMB/SAG “Industry 4.0/ Smart Manufacturing”
Sino-German standardization cooperation

- In May 2015, Sino-German Intelligent Manufacturing (Industry 4.0) Standardization Working Group was established.
- In December 2015, the first Sino-German intelligent manufacturing forum was held in Shanghai.
- In May 2016, the second Sino-German working group meeting was held in Germany.
International cooperation directions

The top design and overall plan of intelligent manufacturing can be enhanced through standardization. And we need to spare no effort to solve the general and basic problems which arise during the development of intelligent manufacturing.
International cooperation suggestions

1. Jointly promote international standardization works of intelligent manufacturing.
2. Establish G20 coordinating working group of intelligent manufacturing standardization.
3. Encourage related standardization institutes and companies to carry out deep standards research cooperation among different countries.
Thank you!