

Hannover Declaration

On 28 April 2016, the Federal Ministry for Economic Affairs and Energy (BMW_i) of the Federal Republic of Germany and the Ministry of Economy, Trade and Industry (METI) of Japan released a Joint Statement on Cooperation between BMW_i and METI regarding the Internet of Things (IoT) / Industrie 4.0 (hereinafter: Joint Statement). On 28 April 2016, Plattform Industrie 4.0 (PI 4.0) and Robot Revolution Initiative (RRI) also released a Joint Statement on cooperation regarding IoT / Industrie 4.0.

Reemphasising that the digitisation and the linking of production processes along the whole global value chain via internet offer great economic potential for the economies of both countries,

- leading to connected industries where humans, machines and technologies are connected with each other even across borders,
- leading also to new technological and digital solutions,
- requiring the development of digital skills to be fostered through the education system, including vocational training and on the job training, and

reemphasising that cooperation among companies, research institutes, platforms, namely PI 4.0 and RRI, and governments is important for harnessing the potential of IoT / Industrie 4.0,

the Hannover Declaration intends to modify two different aspects of the Joint Statement between BMW_i and METI mentioned above.

Firstly, BMW_i and METI welcome the fact that the Ministry of Internal Affairs and Communications (MIC) of Japan becomes a participant of the Joint Statement between BMW_i and METI mentioned above.

BMW_i, METI and MIC (hereinafter: the sides) have made every effort to bring up IoT / Industrie 4.0 at international level.

On 29 and 30 April 2016, MIC, in cooperation with METI, hosted the G7 Information and Communication Technologies (ICT) Ministers' Meeting in Takamatsu, Kagawa, where G7 countries including Japan and Germany affirmed the importance of promoting economic growth and ensuring cybersecurity in a society where the use of IoT and other emerging ICTs is becoming widespread.

On 7 April 2017, BMW_i will host the G20 Digital Ministers' Meeting in Düsseldorf, where G20 countries including Germany and Japan will reach a consensus upon a Ministers' Declaration and a Roadmap for Digitalisation: Policies for a Digital Future (to be updated after the Digital Ministers' Meeting).

With regard to the bilateral cooperation, the sides and participants of PI 4.0 and RRI (hereinafter: the cooperation partners) have done their best to make every effort to leverage the economic potential of digitisation, to achieve a smooth transition into the digital age in both countries, and to maximise positive impacts on the competitiveness of the industrial sector in both countries.

Secondly, the cooperation partners wish to highlight the following developments made thus far and intend to continue to further deepen and strengthen cooperation regarding IoT / Industrie 4.0 in the existing as well as develop new fields of cooperation as listed below.

(1) Cyber security for IoT / Industrie 4.0

<Outcomes>

1. Participants of PI 4.0 and experts from METI met in Tokyo during CEATEC JAPAN 2016 on 5 October 2016.
2. PI 4.0 and RRI (hereinafter: both platforms) published a common position paper on industrial cyber security on 16 March 2017 (see Attachment 1).
3. Both platforms co-chaired a workshop on Industrial Cyber Security at the G20 conference “Digitising Manufacturing in the G20 – Conference on Initiatives, Best Practices and Policy Approaches” held in Berlin on 16-17 March 2017.

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4. The cooperation partners aim to jointly promote standardisation of IoT-security in the International Standardization Organization (ISO) and the International Electrotechnical Commission (IEC).
5. BMWi and MIC welcome the fact that an “International Workshop on Information Sharing and Analysis Center (ISAC)-Cooperation” was held on 10 and 11 November 2016 under the “G7 Opportunities for Collaboration”. The aim of the workshop was to share information and views on the current situation in cyber security and responses to cyberattacks. BMWi and MIC welcome further efforts by experts to enhance cooperation for sharing best practices on cyber attacks protection and mitigation.

(2) International standardisation

<Outcomes>

1. The cooperation partners met twice in Germany on 7 October and 12 December 2016. They exchanged information on international standardisation for smart manufacturing and published a common strategy paper on international standardisation in the field of IoT / Industrie 4.0 on 19 March 2017 (see Attachment 2).

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2. The cooperation partners intend to jointly cooperate on IoT standardisation in international standardisation fora, including ISO, IEC and International Telecommunications Union (ITU). BMWi, METI and participants of PI 4.0 and RRI intend to fully utilise the Reference Architecture Model Industrie 4.0 (RAMI 4.0) as one of the most important architecture models

in the world, and aim to achieve a common understanding of and greater interoperability among the various reference models proposed to and discussed within the ISO / IEC.

3. BMWi and METI welcome discussion between the ECHONET Consortium and EEbus aiming at specifying potential fields of cooperation.

(3) International regulatory reform

<Outcomes>

1. The cooperation partners intend to participate in the Panel on “Industrie 4.0, IoT and Artificial Intelligence – Legal and Social Challenges” hosted by the German Chamber of Commerce and Industry in Japan on 21 March 2017 at CeBIT.

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2. The sides reaffirm the “G7 Principles and Actions on Cyber” upon which consensus was reached at the G7 Ise-Shima Summit held in May 2016. The sides recognise the importance of the free flow of data for the increasing level of data transactions resulting from the IoT revolution and intend to facilitate its flow while also protecting privacy and ensuring cybersecurity. The sides intend to exercise their leadership in promoting data utilisation and to spread the above principles and, if appropriate, knowledge acquired from IoT / Industrie 4.0 cooperation to countries all over the world. The sides intend to cooperate on analytical activities of the Organization for Economic Co-operation and Development (OECD) including further clarification of the measurement of global data flows to support the assessment of the social and economic impact of digital economy.

(4) Support for small and medium - sized enterprises (SME)

<Outcomes>

1. BMWi and METI intend to promote the visualisation and sharing of best practices in IoT utilisation. They have therefore set up online maps showing best practice examples on how to successfully implement IoT / Industrie 4.0 within a company. More than 150 cases showing advanced IoT utilisation as well as supporting organisations for IoT installation (smart manufacturing supporting teams) are presented on the Japanese online map. More than 270 cases as well as supporting organisations for IoT installation (e.g. Mittelstand 4.0 Competence Centres and testlabs) are presented on the German online map. Some cooperation projects are already registered in the online map. Both platforms have interlinked their online maps with each other and with the French online map. They intend to invite further countries to join this online map initiative.

2. BMWi and METI carried out reciprocal SME missions with the help of the German Chamber of Commerce in Japan (AHK) and the Japan External Trade Organization (JETRO).

The German mission to Japan took place from 20 to 24 February 2017. The Japanese mission to Germany is taking place from 17 to 24 March 2017.

3. BMWi and METI welcome the Memorandum of Understanding between Labs Network Industrie 4.0 and NEC Europe Limited in the field of testbeds with regard to facilitating the access of SMEs to testbeds.

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4. BMWi and METI intend to continue these reciprocal SME missions.

5. BMWi and METI intend to continue sharing information and best practices on how to support SMEs in the digital transformation of their business models in the respective country by continuing to use online maps, facilitating the exchange of views between the German Mittelstand 4.0 Competence Centres and the Japanese Smart-Manufacturing Supporting Teams, and other facilitation tools.

(5) Research and Development (R&D)

<Outcomes>

1. BMWi and METI welcome the fact that cooperation projects between German research institutes, including the German Research Centre for Artificial Intelligence (DFKI) and Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), and the National Institute of Advanced Industrial Science and Technology (AIST) as well as Japanese companies have emerged. These will be exhibited at CeBIT 2017 and are listed on the online map mentioned above.

2. The sides welcome the upgrade of the Letter of Intent between DFKI of Germany and AIST of Japan made in 2016 to the Memorandum of Understanding (scheduled to be signed on 19 March 2017) and the signing of the Memorandum of Understanding between the DFKI and National Institute of Information and Communications Technology (NICT) of Japan (scheduled to be signed on 20 March 2017).

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3. BMWi and METI intend to fund joint R&D projects between German and Japanese companies, their associations and research institutes through funding schemes under NEDO and the Central Innovation Programme for SMEs and the Collective Research Networking (CORNET) based on the Joint Statement of Intent on Bilateral Co-operation in Research, Development and Innovation signed in Hannover on 19 March 2017. The cooperation aims at working together on scientific and technical challenges in all topics and technologies, including IoT / Industrie 4.0 technologies. The cooperation also aims at supporting the exchange of knowledge and especially at strengthening the competitiveness and internationalisation of SMEs in both countries.

(6) Platforms

<Outcomes>

1. BMWi and METI wish to highlight that the cooperation between PI 4.0 and RRI is good and fruitful. BMWi and METI welcome the fact that mutual access to both platforms has been granted for companies from both countries in line with the respective access regulations.
2. In Germany, Hitachi Europe GmbH and Mitsubishi Electric Europe B. V. joined PI 4.0 in June 2016. Fujitsu Technology Solutions GmbH has been participant of PI 4.0 from its start.
3. In Japan, Siemens K.K., SAP Japan Co., Ltd. and Bosch Packaging Technology K.K. are members of RRI. In particular, Siemens has become a member of the advisory board to RRI.

(7) Digital Skills and training

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1. BMWi and METI recognise that digital skills are key factors in the competitiveness of industry in both countries. There is a need to promote digital skills in vocational training and education as well as in on-the-job-training in order to make employees ready for the age of digital transformation.
2. BMWi and METI intend to share policy information and best practices and intend to facilitate cooperation on digital re-education for existing employees.

(8) Automotive Industry

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1. BMWi and METI aim to hold automotive industries policy sessions that should take place as part of the industrial policy dialogue at Director-General level that was launched last year. BMWi and METI intend to invite relevant stakeholders from the private and public sectors including MIC to join the automotive industries policy sessions, as necessary.
2. The automotive industries policy sessions are intended to cover a wide range of emerging industrial policy issues such as automated and connected driving including security and safety, dynamic maps (3D maps), basic research on internal combustion engine, and next-generation electric car charging system.
3. BMWi and METI explicitly wish to highlight that the sessions are to be initiated on the topics described in the Memorandum of Cooperation regarding industrial policy aspects of electric mobility, other alternative powertrains and automated and connected vehicle and other emerging issues within the framework of that MoC.

(9) ICT Cooperation

<Next Steps>

1. BMWi and MIC intend to continue the 'Germany-Japan ICT policy Dialogue'. One agenda item for the next meeting should deal with IoT and related matters; potential items for discussion are artificial intelligence and the 5th generation mobile communications.

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