D5.1: Terms of Reference for the external Advisory Group

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Abstract	This deliverable aims at providing a short overview on the concept of the Advisory Group used in the EXCITING project, as well as the scope and set up.
Keywords	Advisory Group, Terms of Reference

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Nature of the deliverable:		R	
Dissemination Level			
PU	Public, fully open, e.g. web		✓
CI	Classified, information as referred to in Commission Decision 2001/844/EC		
CO	Confidential to EXCITING project and Commission Services		

* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

OTHER: Software, technical diagram, etc.

THE EXCITING PROJECT

Europe and China are at the forefront of technological advances in areas related to the Future Internet (especially IoT and 5G). While both parties share common technological objectives, there is still room for improvement in what concerns bilateral co-operation. As a result, the main purpose of **EXCITING is to support the creation of favourable conditions for cooperation between the European and Chinese research and innovation ecosystems, mainly related to the key strategic domains of IoT and 5G**.

EXCITING will study the research and innovation ecosystem for IoT and 5G in China and compare it with the European model.

EXCITING will identify and document the key international standards bodies for IoT and 5G, as well as other associations and fora where discussions take place and implementation decisions are made.

Going beyond standardisation, interoperability testing is a key step towards market deployment. **EXCITING will identify and document the key international InterOp events at which European and Chinese manufacturers can test and certify their IoT and 5G products**. It will also explain the rules for engaging in these events.

EXCITING will produce Best Practice guidelines for establishing and operating practical joint collaborations, in order to stimulate further such co-operations in the future on IoT and 5G Large Scale Pilots.

As a result of the above investigations **EXCITING will produce a roadmap showing how research and innovation ecosystems, policy, standardisation, interoperability testing and practical Large Scale Pilots** should be addressed during the H2020 timeframe, and make recommendations for optimising collaboration between Europe and China for IoT and 5G.

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ABBREVIATIONS

Acronyms	Defined as
AG	Advisory Group
EC	European Commission
EU	European Union
ICT	Information and Communication Technologies
IoT	Internet of Things
PPP	Public Private Partnership
ToR	Terms of Reference

1. INTRODUCTION

With the aim to reinforce EU-CHINA ICT collaboration in pre-competitive research and innovation, mainly related to the key strategic domains of IoT and 5G, EXCITING mobilises for the duration of the project and on a regular basis EU and CHINA experts, organised in one Advisory Group.

The members of the Advisory Group are representatives from related H2020 and China-funded industry-driven projects and ICT associations, networks and PPPs from the EU and the China, as appropriate and upon agreement with the Advisory Group chair.

The Advisory Group members have been constituted during the proposal of the project and specialists' involvement has been confirmed. However, the groups can of course evolve over the project lifetime and further members may be invited if such need is identified.

The views of the Advisory Group will be integrated in working sessions in order to identify gaps and opportunities and to provide a map of challenges, open problems, and needs for future policies and strategic EU-CHINA initiatives, both policy and research-related.

2. CONCEPT OF THE EXCITING ADVISORY GROUP

The EXCITING Advisory Group (AG) is part of the core project activity and its work is well embedded in the overall project activity. Indeed, the Advisory Group is led by a consortium partner ("Manager of Advisory Group") who provides the inter-connection and takes care of involving "his" experts in relevant activities and providing information stemming from the Advisory Group discussions to the other project partners.

The Advisory Group members are confirmed by the Manager of the Advisory Group and its activity is organised so as to fit to the overall project work scheme and calendar. The AG will meet at least five times during the 24 months' project duration and these physical meetings are complemented with regular exchanges by email and through telephone conferences.

For economic and ecologic reasons, it will be sought to combine physical meetings with important project events or plenary meetings, so as to avoid multiple travel of experts and consortium members.

The first physical meeting of the Advisory Group members is organised on 8th to 10th March 2017 in Beijing (China), hosted by BII Group (Beijing Internet Institutes). The first day of the event is a plenary meeting to present all the activities of the project and the day ends with a focus group discussion in which the AG will identify areas for concrete cooperation and correlate expectations from both the EU and China sides. The second day aims to present and showcase some of the latest development of 5G and IoT in both the EU and China, covering topics including EU-China S&T cooperation priorities in the fields of ICT, standardisation, cooperation on large scale pilots and testbeds, as well as identifying potential ways forward towards better cooperation between both sides in these two fields. And the last day is a Policy and Advisory Group Round Table.

The other meetings of the AG will be organized during the following months, according to the AG timetable. Meetings will, as far as possible, be organised back to back with relevant larger events/conferences in the scope of the Advisory Group members.

All experts will also be invited to the final project event, organised at the end of the EXCITING project.

In addition to the physical meetings and regular exchange, it is also planned to organise 2-3 webinars which involve Chinese and European stakeholders involved in policy and ecosystem cooperation and with a connection to technical cooperation matters. The Advisory Group members will also be invited to join these webinars.

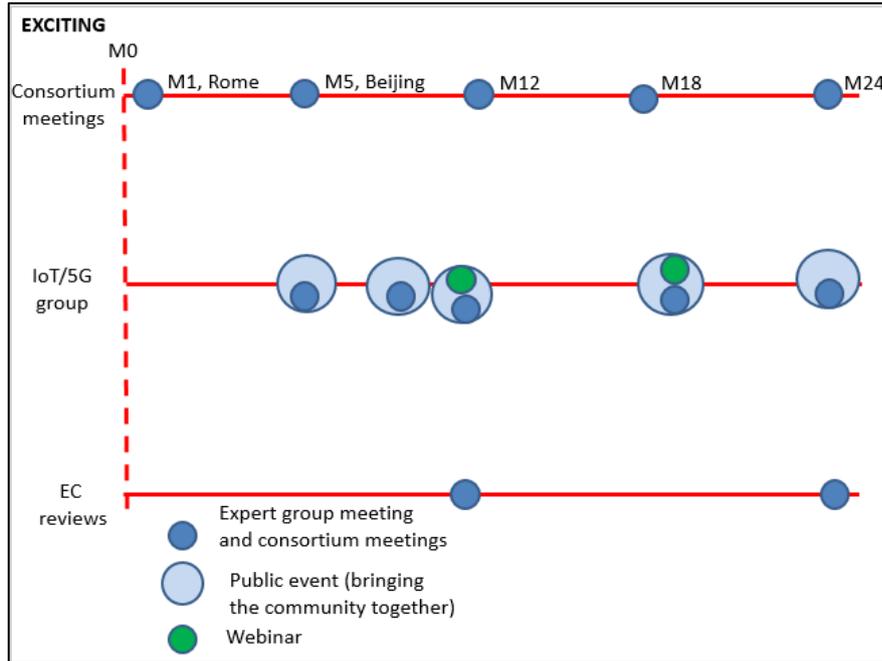The figure below shows the provisional planning of the AG meetings:

Figure 1: Provisional Advisory Group meeting schedule

3.   EXCITING ADVISORY GROUP: SCOPE AND COMPOSITION

The following sub-sections specify the scope of the Advisory Group, its relation to external networks of the field, as well as the list of confirmed members.

3.1   IoT / 5G Advisory Group

As regards the IoT, Chinese and European researchers have worked together on IoT in recent years by pioneering Europe-China IoT pilots such as the IPv6-based IoT6 transnational Pilot between MI, BUPT and BII supported by UL and Martel, and tests between Tsinghua university and UPMC. Several partners (HUAWEI, UL, MI, Martel) are directly active in the Alliance for Internet of Things Innovation (AIOTI), an industry-oriented initiative, sponsored by the European Commission to foster and promote the formulation of the future IoT research as well as innovation and standardisation policies. It is playing an essential role in the designing of IoT Large Scale Pilots, which will be funded by the Horizon 2020 (H2020) Research and Innovation Programme. The members of AIOTI will jointly work on the creation of a dynamic European IoT ecosystem. This ecosystem is building on the work of the IoT Research Cluster (IERC) and supports the innovation process across industry and business sectors of IoT, by transforming ideas into solutions.

The recent EU-China IoT White Paper on Standardisation calls for bilateral work such as (i) mapping IoT SDOs and Alliances to application areas (vertical and horizontal domains) for Horizontal/Telecom, Home/Building, Manufacturing/industry automation, Vehicles/Transportation, Healthcare, Energy, Cities, Wearables, Agriculture and food chain, (ii) IoT open source development as part of the standardisation landscape for Fields of Action, IoT Reference Architectures, Interoperability support - technical/semantic, Trust, security, privacy, and (iii) International standardisation policy support.

As regards 5G, many Chinese universities, institutes and industrial companies have invested significantly on research into the technologies with the support of the Chinese government, which has already resulted in a number of achievements. In July 2015, HUAWEI announced the 1st 5G prototype equipment with a peak data rate of 10Gbps. In December 2015, China Mobile implemented a pre-5G Pilot project based on Massive MIMO (Multiple-Input Multiple-Output) technology with a transfer speed of more than 400Mbps in Zhejiang.

In Europe, the 5G PPP (Public-Private Partnership), has been launched as a joint initiative between the European Commission and the European ICT industry. The Commission is investing €700 million and the industry will leverage this investment by a factor of 5, bringing the total investment into the 5G PPP to more than €4 billion, to rethink the infrastructure and to create the next generation of communication networks and services. The 5G PPP is aiming at securing Europe's leadership in the areas where Europe is strong or where there is potential for creating new markets such as smart cities, e-health, intelligent transport, education or entertainment & media. The 5G PPP initiative will reinforce the European industry to successfully compete on global markets and open new innovation

opportunities1.

The 5G PPP is planned to be organised in three or four phases, encompassing research (current stage), optimisation (2016-2017) and large scale trials (2019-2020). It aims to deploy 5G as from 2020, which will require before 2020 to develop a series of ground-breaking technologies, global standards and to agree on relevant spectrum bands.

The first call for projects has resulted in 18 Research and Innovation projects being selected, addressing a rich cross section of the research challenges leading to a 5G infrastructure by 2020. These projects started on 1st July 2015.

In September 2015, China signed an Agreement2 with the EU on 5G to seek more co-operation on joint research, standardisation, spectrum, and the Internet of Things. The objective of this Agreement is to ensure China and Europe maintain an equivalent level of industrial transparency between the two parties. Under the declaration, China and Europe aimed to reach a consensus on the concept, basic functionalities, key technologies, and timeline for 5G by the end of 2015, or roughly five years ahead of the expected launch of commercial 5G networks. In addition, a multilateral MoU has been signed between the 5G Infrastructure Association (5GIA), IMT2020 from China, and other associations from Asia and North America, in order to organise global 5G events in a coordinated manner, on a rotating basis per continent. The first global event is planned in China in Q1 2016, and the second one will be held in Europe and organised by the 5GIA in Q4 2016 (probably in November)3. Some 5G PPP projects have also initiated specific technical interactions with China4.

The objective of the Advisory Group is to get strategic policy advice and guidance to the project in view of the roadmap for EU/Chinese co-operation and policy recommendations.

Namely, the AG members will:

- ✓ Contribute with strategic policy advice and guidance to the project in view of EU/Chinese collaboration in Future Internet;

- ✓ Provide targeted advice during the project implementation, i.e. on specific project recommendations (co-operation and research priorities, challenges, opportunities, etc.);

- ✓ Facilitate linkages with the targeted communities in the Chinese/EU ecosystem. The Advisory Group will give feedback, provide advice and ideas notably concerning strategies for EU-China collaboration;

- ✓ Support project dissemination activities, acting as "project ambassadors" by keeping informed their various networks of the project activities and outcomes.

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[1] https://5g-ppp.eu/wp-content/uploads/2015/10/5GPPP-brochure-final-web.pdf

[2] http://europa.eu/rapid/press-release_IP-15-5715_en.htm

[3] https://5g-ppp.eu/leading-5g-visionary-organizations-in-europe-usa-japan-south-korea-and-china-sign-multi-lateral-memorandum-of-understanding-for-global-5g-events/.

[4] https://5g-ppp.eu/the-first-sino-europe-5g-technical-workshop-co-organized-by-5g-norma-and-metis-ii-took-place-on-november-5th-2015/

3.2   Composition of the AG

Here below is the current composition of the Advisory Group. The list will be finalised soon:

1. **EUROPE**

   1. Mr. Jean-Pierre Bienaimé (5G PPP Initiative Board)
   2. Dr. Mirko Presser (DTU)
   3. Mr. Diego Lopez (Telefonica)
   4. Mr. Christian Jacquenet (Orange)
   5. Dr. Martin Brynskov (Univ. Aarhus)
   6. Mr. Antonio Graziano (Huawei)

2. **CHINA**

   1. Dr. Chih-Lin I (China Mobile)
   2. Dr Zigin San (ITU-T SG20)
   3. Prof. Jian Song (Tsinghua University)
   4. Dr. Betty Wu (Seconded European Standardization Expert in China (SESEC))
   5. Prof. Yang Yang (Shanghai Research Center for Wireless Communications)
   6. Mr. Jianning Zhang (IoT Alliance of Zhongguancun Science Park)
   7. Dr. Hongke Zhang (National Engineering Laboratory on Interconnection Technology for NGI, Beijing Jiaotong University)
   8. Prof. Xiaogang Huang (Inst. of Microelectronics of Chinese Academy of Sciences Researcher)

4. CONCLUSION AND PLANNED NEXT STEPS

The EXCITING Advisory Group has been set up with the purpose of supporting the EU-China ICT collaboration in specific fields. This is why specialists have been invited that can provide inputs from the main topics covered in each of the fields (IoT and 5G), relevant to both the EU and China. The group will, in addition, seek collaboration to important networks active in their field, as specified before.

The AG will come together for the first time on 8th to 10th March 2017 in Beijing (China). Based on discussions from this first meeting and afterwards, the members can contribute to a panorama report which will contain information on Chinese ICT-related programmes, networks and priorities (for EU organisations), information on EU ICT-related programmes, networks, priorities and calls (for Chinese organisations), a H2020 guide for Chinese organisations and this report will be available on the EXCITNG website. The AG may also contribute to the EU-China Future Internet Policy white paper. This white paper will propose ways forward in order to achieve fair competition and equal access to markets and technologies, and help to improve the mutual understanding of the differences in approaches and policies and to overcome unproductive blocking situations.

5. ANNEX: TERMS OF REFERENCE OF THE EXCITING PROJECT ADVISORY GROUP

The EXCITING project team has developed Terms of Reference (ToR) as outlined below as a basis for the Advisory Group members work. Below is displayed the general basis provided, as of February 2017.

The content of the ToR will be further updated after the first meeting held in March 2017.

EXCITING
EU-China Study on IoT and 5G

BACKGROUND

The European Commission, through the ICT-37-2016 H2020 call, plans to support a project aiming to facilitate EU/China collaboration, with the aim to create the conditions for optimised cooperation opportunities between the European and the Chinese research and innovation ecosystems including standardisation, in particular for key strategic domains where global approaches, interoperability and standards are sought like IoT and 5G. It includes the identification of practical opportunities for future cooperation on a reciprocal basis.

EXCITING is the name of a project submitted by a wide consortium of EU/Chinese partners and led by Martel Consulting. EXCITING stands for EU-China Study on IoT and 5G and addresses both subjects (IoT and 5G) identified in the topic ICT-37-2016 CHINA: Collaboration on Future Internet.

INTRODUCTION

Europe and China are at the forefront of technological advances in areas related to the Future Internet (especially 5G and IoT). While both parties share common technological objectives, there is still room for improvement in what concerns bilateral co-operation. As a result, the main purpose of EXCITING is to support the creation of favourable conditions for co-operation between the European and Chinese research and innovation ecosystems, mainly related to the key strategic domains of IoT and 5G. The goal is to identify relevant and practical opportunities for future co-operation between these parties and make recommendations regarding the respective research and innovation ecosystems.

EXCITING PROJECT ACTIVITY

The main objective of EXCITING is to support the creation of favourable conditions for co-operation between the European and Chinese research and innovation ecosystems, mainly related to key strategic domains linked to the Future Internet (e.g. IoT, 5G), aiming to identify relevant and practical opportunities for future co-operation between these parties.

The specific objectives of the project are as follows:

- **Obj. 1:** To investigate and document the **research and innovation policies and ecosystems in China** and compare these with the European ones.

- **Obj. 2:** To investigate which **international standardisation bodies** are responsible and appropriate for the key strategic domains of IoT and 5G, given that these are areas where global approaches are needed.

- **Obj. 3:** To investigate how **global interoperability testing** (with the focus on EU and China) is being used to validate research and innovation in the key strategic domains of IoT and 5G, to ensure prototypes can be turned into mature results/standards and successful deployments.

- **Obj. 4:** To investigate **practical opportunities for future co-operation on Large Scale Pilots for IoT and 5G** on a reciprocal basis.

- **Obj. 5:** To produce, thanks to the results of the above investigations, **a roadmap showing how research and innovation ecosystems, policy, standardisation, interoperability testing and practical Large Scale Pilots should be addressed during the H2020 timeframe**, and making **recommendations for optimising collaboration between Europe and China for IoT and 5G**.

OBJECTIVES OF THE ADVISORY GROUP

To achieve the project objectives, the EXCITING consortium will mobilize for the duration of the project and on a regular basis **an outstanding community of 20+ actors** – representatives of the ICT industries from EU and China, domain (IoT and 5G) experts, policy specialists, as well as representatives of research and innovation networks, both from the EU and China.

Advisory group members comprise both industry and academia representatives and will work jointly on **two main elements:**

(1) Represent and advance innovation and scientific excellence in the topics through exposure of research and innovation results in this international context;

(2) Be a platform for the strategic discussion and orientation for potential future collaboration opportunities, based on the needs of industry and/or society.

The **role of the Advisory Group is to support the EXCITING consortium in the following activities:**

- Contribute with strategic policy advice and guidance to the project in view of EU/Chinese collaboration in Future Internet;

- Provide targeted advice during the project implementation, i.e. on specific project recommendations (co-operation and research priorities, challenges, opportunities, etc.);

- Facilitate linkages with the targeted communities in the Chinese/EU ecosystem. The Advisory Group will give feedback, provide advice and ideas notably concerning strategies for EU-China collaboration;

- Support project dissemination activities, acting as "project ambassadors" by keeping informed their various networks of the project activities and outcomes.

COMPOSITIONS OF THE ADVISORY GROUP

The Advisory Group will be composed of members from industry and academia, representing the specific fields of the EXCITING project.

Membership in the groups will be opened for representatives from related H2020- and China-funded industry-driven projects and ICT associations, networks and PPPs from the EU and the China, as appropriate and upon agreement with the Advisory Group chair.

EXPECTATIONS ON ADVISORY GROUP MEMBERS

Advisory Group members are expected:

- To participate in three Advisory Group meetings during the project lifetime (24 months) and two conferences/workshop (one in Europe, one in China); indicative timing is the following (locations are not yet known):

  o **Meeting 1**: March 8th & 10th 2017 (plenary and and Advisory Group Round Table) - in Beijing, China;

  o **Meeting 2**: around Month 12;

  o **Meeting 3**: around Month 18;

  o **Workshop/Conference 1**: around Month 9

  o **Workshop/Conference 2**: around Month 21;

- Participation could be done on-line or contributions provided in advance in writing, in case of impossibility to join the meeting;

- To actively contribute, during these meetings, to project discussions, findings and recommendations;

- To be the **project ambassadors** by keeping informed their various networks of the project outcomes, the **project proactive observers** by notifying any new initiatives and **the project inner reviewers** by providing feedbacks, advices and ideas notably concerning the Advisory Group thematic, etc.

OPERATIONAL MODE OF THE ADVISORY GROUPS

1. MANAGEMENT OF THE ADVISORY GROUP

The Advisory Group will be managed by the University of Luxembourg (manager of the Advisory Group).

The manager of the Advisory Group is expected:

- To finalise composition of the Advisory Group during the early project stage;

- To nominate one contact person in order to facilitate the correspondence, provide technical support to the process and support drafting report under direction of the manager;

- To facilitate the interaction of the Advisory Group members;

- To moderate the meeting of the Advisory Group;

- To prepare the Advisory Group's meeting report (public document) and to follow up the meeting.

2. MEETINGS OF THE ADVISORY GROUP

A tentative planning of the meetings has been established. The date of the meetings will be fixed at least 4 months in advance in order to provide enough time to ensure the necessary logistical preparations.

The draft agenda proposed by the hosting party will be finalized with the coordinator and the secretariat through an iterative process well in advance of the meeting and if possible not later than 30 days prior to the meeting.

Ad hoc members may be invited to participate in meetings for which a specific area of expertise may be identified.

3. CONFIDENTIALITY ISSUES

The materials of the Advisory Group will be made public, after validation from the Advisory Group members. Those documents will be circulated to the Advisory Group members, asking for comments and remarks where applicable until a certain deadline. If no feedback is provided until this deadline, the consortium will consider this to be an approval.

4. RESOURCES

The travel costs of the nominated advisory group members (from both EU and China) who are not delegates of the EC- and China- funded projects will be covered by the EXCITING project. The advisory group members should contact directly the AG manager for any question related to the meeting of the Advisory Group and ticket cost coverage. Contact details will be provided separately.

5. TIMESCALE AND DURATION

The Advisory Group is established for the duration of the project.

LEGAL STATUS

These Terms of Reference are not intended to create any legally binding obligations and do not constitute an agreement under international law.

Visit:

https://euchina-iot5g.eu/