GNSS.asia

Industrial cooperation across continents

Tomasz Wierzbowski, GNSS.asia Korea Program Manager

European GNSS Agency

HORIZON 2020

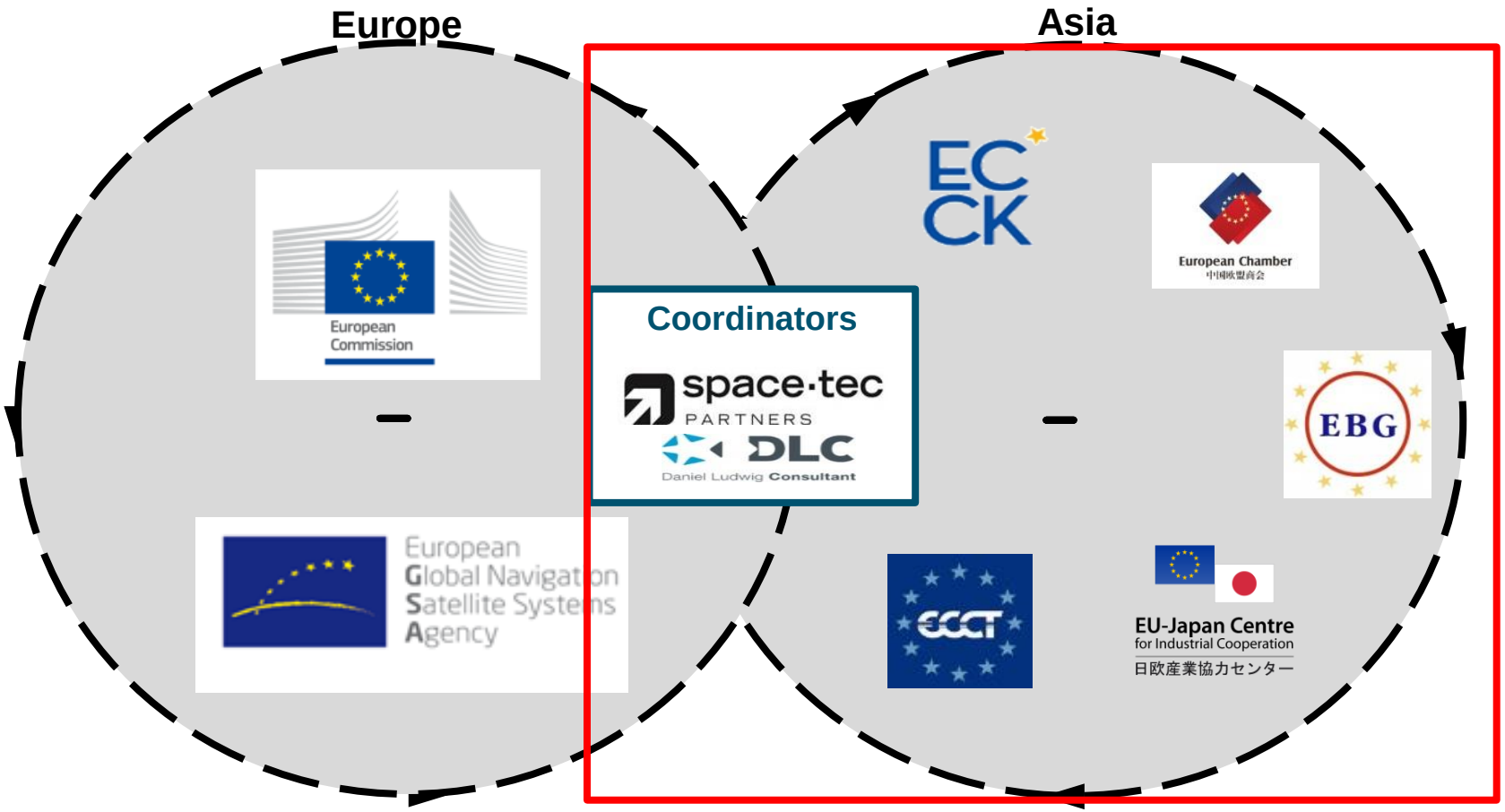
The GNSS.asia initiative – The three objectives

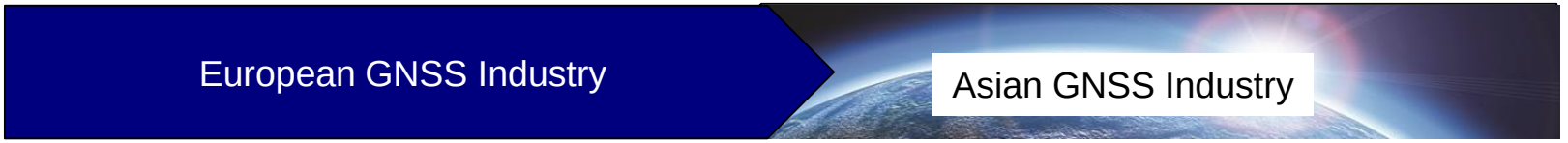
Facilitating
Industrial Cooperation

Supporting
Institutional Relations

EGNSS Awareness in Multi-GNSS context

Building on the Success of GNSS.asia





GNSS.asia partner network in Asia

Japan	EU-Japan Centre for Industrial Cooperation 日欧産業協力センター	EU-Japan Center for Industrial Cooperation
Korea	space·tec PARTNERS	SpaceTec Partners Korea Project Office
China	European Chamber 中国欧盟商会	European Chamber of Commerce in China
Taiwan	ECCT	European Chamber of Commerce in Taiwan
India	IIRA	In coop. with European Business Group India
SE-Asia	space·tec PARTNERS	SpaceTec Partners

SPAC · 高精度衛星測位サービス利用促進協議会 · JAXA · 内閣府 Cabinet Office,Government of Japan

ETRI 한국전자통신연구원

CSNC · CENC

TTIA Taiwan Telematics Industry Association · 財團法人資訊工業策進會 INSTITUTE FOR INFORMATION INDUSTRY · ITRI Industrial Technology Research Institute

AIRPORTS AUTHORITY OF INDIA · इसरो ISRO · SAC

SPACETIME TECHNOLOGY · IGNSS International Global Navigation Satellite Systems Society Inc.

MGA

Leveraging GNSS capacity in Asia

Stakeholders – Institute for Positioning, Navigation & Timing (IPNT)

The objectives of the **Institute for Positioning, Navigation and Timing (IPNT)** are to contribute to the profit of society in general, also contribute to the development of PNT and its applications, and furthermore help develop science, technology and industrial cooperation. IPNT members consist of academic researchers, engineers, government officials, private entrepreneurs, professors and students actively participating in PNT development. Origins of the organisation stem from 1994, when the GNSS Technical Council was established to contribute actively to the field of GNSS and its applications. In December 2011, the KGS (www.gnss.or.kr) was established in Seoul, Korea with the foundation from the GNSS Technical Council, and since then it has contributed to academics as well as industries in the fields of GNSS. KGS has been a associated partner in GNSS.asia since the beginning. In 2017, the Institute was **renamed into Institute for Positioning, Navigation and Timing (IPNT)**. KGS/IPTN have been holding annual conferences in Jeju since many years

President: Dr. Chansik Park (Professor of ChungBuk Uni)

Dr. Sanguk Lee

- GNSS Expert for GNSS.asia Korea since January 2012
- GNSS Technical Council Member and Trustee of The Korean Society of Space Technology
- Board member and editorial member of the IPNT since 2016
- Principal Researcher in satellite research group at ETRI
- Represents ETRI in Galileo H2020 project STRIKE3
- Project manager and researcher in several GNSS projects
- Ph. D. in Aerospace Engineering (Auburn University)

Dr. J-H. Won

- Professor in Inha University since June 2016
- Formerly head of Navigation Laboratory at Univ. FAF Munich
- Former member of the Organisation Team of the Munich Satellite Navigation Summit
- Research activities include GNSS SW receivers, GNSS/INS coupling systems & user terminals
- Ph.D. in Electrical Engineering (Ajou University, Korea)

Dr. W.S. Choi

- Involved in GNSS.asia since 2013, representing in MGA 2014 and ESS 2016, regular judge in GNSS.asia Challenge
- Principal Researcher in ETRI since June 1992
- Project manager for several GNSS related R&D projects since 2004; R&D on satellite ground control systems
- Auditor of the IPNT since 2016
- Chairman of LBS Standardisation, LBS PG, TTA, Korea since 2008
- Chapter director of ICROS (Inst. of Control, Robotics and Systems)
- Ph.D. in Mechanical Engineering (The University of Alabama)

Dr. Gumin Jeong

- Involved in GNSS.asia since 2015
- GNSS technical advisor for GNSS.asia Korea since Spring 2014
- R&D projects on LBS, smartphone and embedded systems since 2001
- Editorial Board of the IPNT since March 2013
- Member of LBS Standardization, LBS PG, TTA, Korea since 2009
- Ph.D in Electrical Engineering and Computer Science (Seoul National University)

GNSS.asia core team – update

EUROPE

Rainer Horn
Global Coordinator

Ross Findlay
Deputy Coordinator

Hannes Dekeyser
Project Manager

Daniel Ludwig
GNSS Expert

ASIA

Tomasz Wierzbowski
GNSS.asia Korea
SpaceTec Partners

Tiantian Qi
GNSS.asia China
EUCCC

Fabrizio Mura
GNSS.asia Japan
EU-JP Centre

Varadarajan Krish
GNSS.asia India
IIRA

Davof Xu
GNSS.asia Expert - China

Angela Hsiao
GNSS.asia Taiwan
ECCT

GNSS.asia – Building a community step by step at almost 60 events worldwide!

초정밀 GPS 보정시스템 (SBAS)

2017 KASS WORKSHOP

SBAS 비즈니스 활용방안

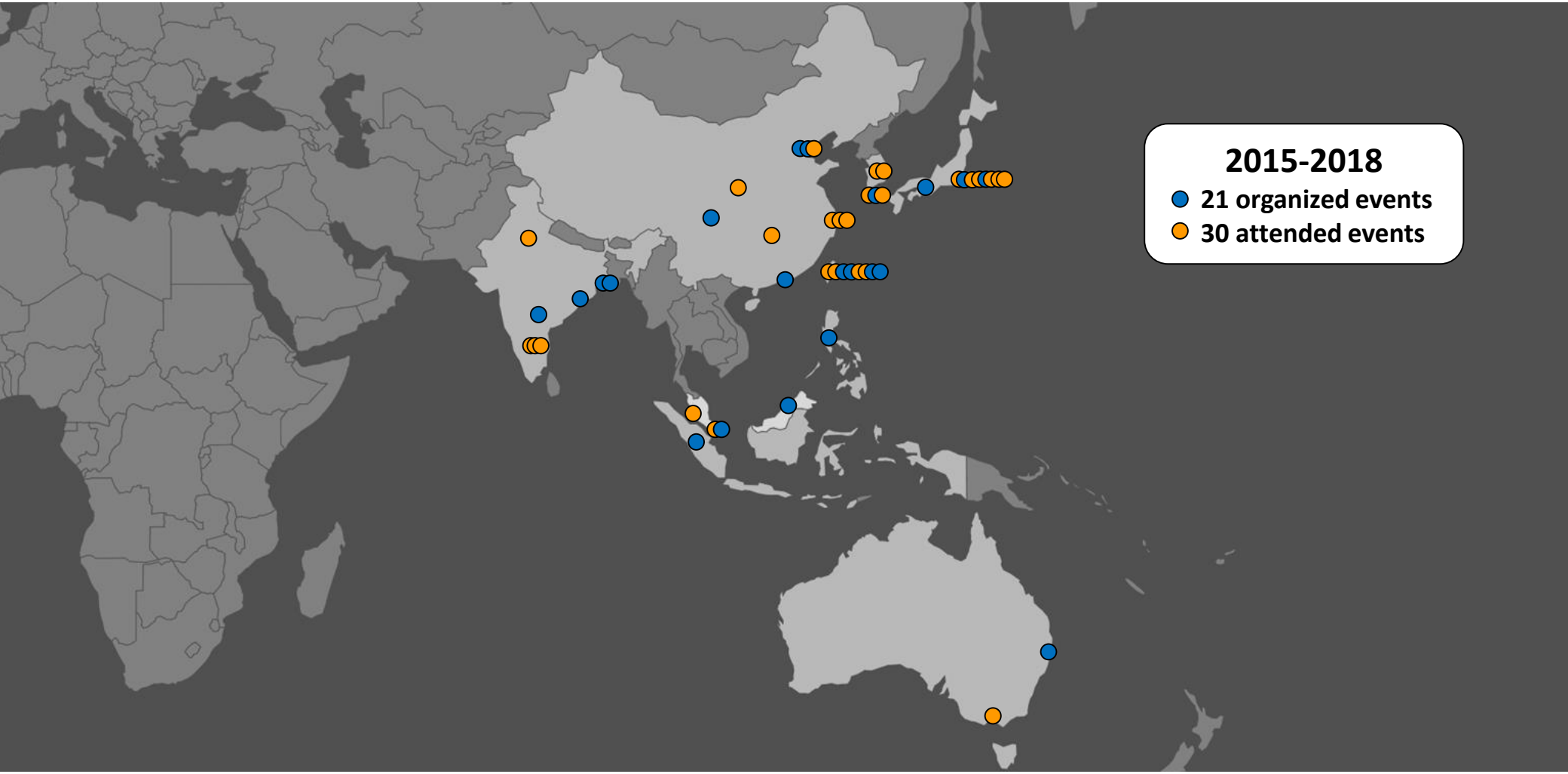
◆ 일시 : 2017.11.01 WED
10:30 ~ 17:30

◆ 장소 : 라마다프라자 제주호텔
2F 우도홀

KARI 한국항공우주연구원 KASS SBAS

GSA addressing IPNT Conference in Jeju

GNSS.asia at 50+ events in Asia-Pacific



Achievements of GNSS.asia

GNSS-related businesses actively supported

~ 40
Businesses actively supported

Facilitated business partnerships

~ 16
Facilitated business partnerships

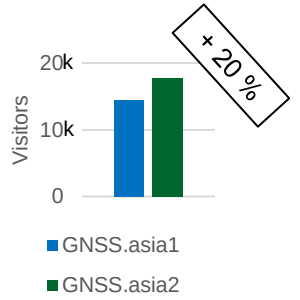
Successful EGNSS adoption

MEDIATEK, CEC, CEC Huada Electronic Design Co.,Ltd., LG, SONY, FURUNO, ADVANTECH, HUAWEI, UniStrong 合众思壮, MGA

Organisations used as multipliers for EGNSS promotion

	2		2
	7		3
TAIWAN	2		6

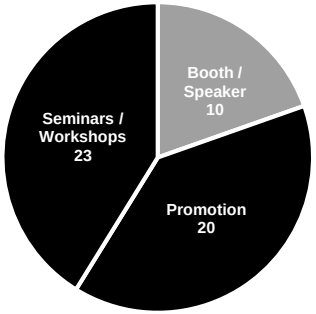
Website vistors



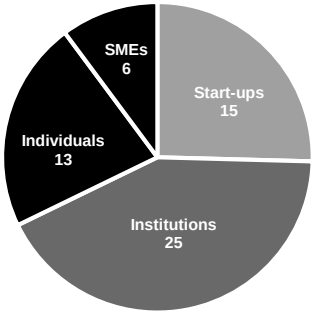
Participants in GNSS.asia sessions

~ 1200
Visitors at GNSS.asia Events to date

Number of events



GNSS.asia Challenge entries



Institutional Agreements

EU-Korean Science & Technology Agreement, Free Trade Agreement

EU-Japan Cooperation Arrangement GSA / National Space Policy Secretariat Cabinet Office (in progress)

High-level meetings facilitated

- **EC/GSA– National Space Policy Secretariat/ Cabinet Office (Tokyo, Kyoto, The Hague, Munich)**
- **GSA - Ministry of economic affairs (Bordeaux 2015)**
- **GSA – Korean Ministry of Land Infrastructure and Transport (Bordeaux), EU GNSS Korea Week 2017**
- **GLAC – GNSS Centre of Excellence (Czech Republic)**
- **GSA – GAGAN**

European companies engaged in GNSS.asia activities

European Companies

Telespazio The Locating Company · IFEN GmbH · TOMTOM · Anwendungszentrum Oberpfaffenhofen · TRACEWAVE · septentrio · elecnor deimos · bavAIRia Europe's heart of aerospace and navigation · gmv Innovating Solutions · intelligence on wheels · imec · Deutsche Telekom · BOSCH Invented for life · taoglas antenna solutions · IGUASU Software Systems · NavCert · eureka Connecting Competence · u-blox · Fraunhofer IIS · aerospace valley · THALES · Telematics Update · Alcatel·Lucent · ThalesAlenia Space · SYNTONY GNSS · OVINTO · NSL · veripos On Target · GReD

… and many more!

Cooperation

Korea: SAMSUNG · ASCEN GPS Global GPS Leader AscenKorea Inc. · SK · kt · TELACE · DusiTech · LG

China: Hwa Create · CSIC · UNICORE · UniStrong · NAVINFO

Taiwan: MEDIATEK · SkyTra · LOCOSYS · PRINCO · MITAC · ADVANTECH · ASUS · PEGATRON · wistron · WNC · RoyalTek · GlobalTop

Japan: FURUNO · Mapion · SEIKO EPSON · HITACHI Inspire the Next · MITSUBISHI ELECTRIC · NAVITIME · clarion · AISIN AW · ALPINE · NISSAN · FUJITSU TEN

India: ASL Advanced Systems · AqTronics · LARSEN & TOUBRO · amdl · roadmatics · kalycito · oxys · Fargo Telecom

Past EU GNSS actions in Korea

GNSS.asia track record

The Challenge

Nottingham Scientific Limited (NSL) is a UK-based high-tech SME which specialises in developing algorithms, software and applications using GNSS technologies. As a partner in an ongoing R&D proposal for a call under Horizon 2020, NSL was looking to initiate a bilateral discussion with Asia-Pacific stakeholders which could contribute additional skills to the project consortium

The GNSS.asia solution

Through reaching out to GNSS.asia, the local GNSS.asia teams were informed about the ongoing R&D proposal. Based on their strong network of stakeholders and experience in matchmaking between industry partners, the GNSS.asia teams in India and Korea reached out to the most suitable partners which could bring the necessary complementary skills and know-how for this proposal.

The Outcome

The connected partners were successful in their joint R&D proposal in the framework of Horizon 2020. Their project 'Standardisation of GNSS Threat reporting and Receiver testing through International Knowledge Exchange, Experimentation and Exploitation [STRIKE3]' was selected from a very competitive pool of entered proposals.

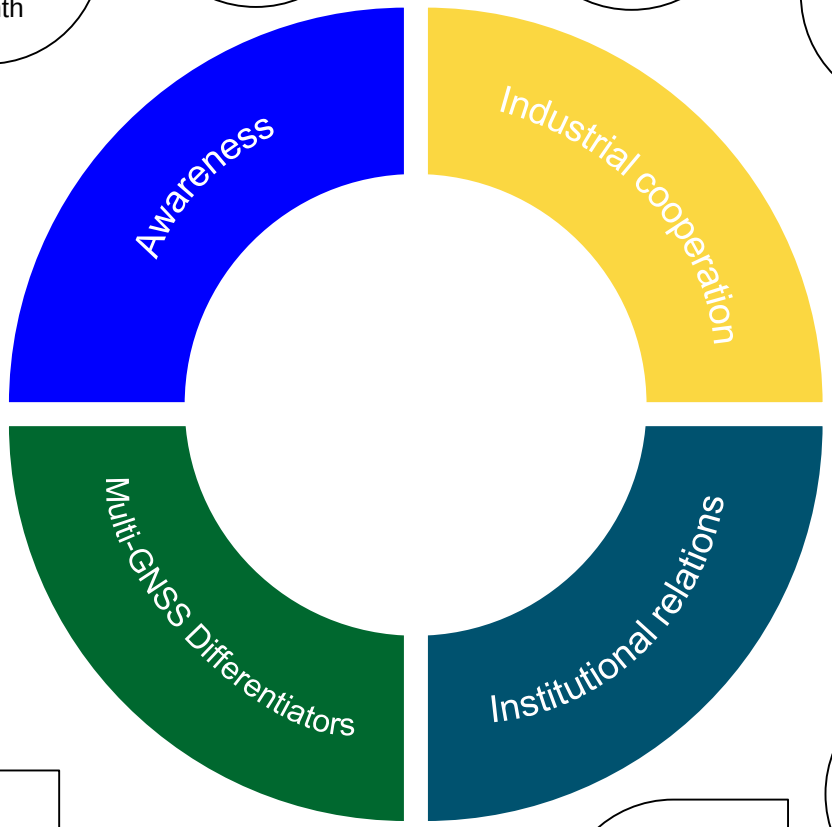
Industrial cooperation

GNSS.asia3 wants to further expand its impact across target regions

After GNSS.asia2

	Level 0 "Beginner"	Level 1 "First traction"	Level 2 "Active engagement"	Level 3 "Mutual activity"	Level 4 "Full swing"
Awareness	• Little knowledge • Suspicions on "EU GPS" • No EGNSS events • No local language info on EGNSS	• First GNSS.asia events • Stakeholders identified • Local GNSS.asia website / newsletter	• Larger GNSS.asia event with executives • Stakeholder dialogue • User community engaged • Support by politics*	• Structured, differentiated info • Sensor industry interested • Concrete use cases articulated	• EGNSS well known • Positive perception • User "pull" for information
Industrial Cooperation	• Little EU/Asia GNSS connection • Dealers for upstream providers	• Industry mapped • Opportunities mapped • Introduced to industry associations	• Industry profiles • Brochure / case study • Expressions of interest • Associations engaged	• EU industry engaged /proposals • Industry visits in EU • Exchange beyond events • Joint R&D preparation	• Industry MoUs • Joint H2020 • First commercial cooperation • Industry "pull" for information
Differentiators	• Little knowledge about EGNSS • Doubts about Galileo realisation	• GNSS-generic discussions • R&D community • Understanding of EGNSS actors • Selected application sessions	• Understanding of services and schedule • Multi-GNSS and feature discussions • Application level dialogue • Synergy discussions	• EGNSS specific opportunities • Local protagonists for EGNSS • Expression of interest for testing • EGNSS pilot users	• Multi-GNSS experiments • CS demonstrator • OS-A Pilot • Galileo integration in Asian receiver of chipset

GNSS.asia in numbers



60 GNSS.asia Challenge participants

~ 1200 Website visitors a month

51 Events with GNSS.asia presence

21 GNSS.asia Seminars & Round tables

100 + Number of registered companies

34 Number of actively supported companies

300 + Newsletter subscribers

~ 950 Visitors at GNSS.asia events

15 Number of facilitated partnerships

16 Multiplier organisations

5 Cases of Galileo adoption

4 Facilitated high-level meetings

2 Number of Agreements facilitated

10 EC/GSA Missions supported

11 Delegation & Company visits

What can GNSS.asia do for you?

Networking & matchmaking support

- Stakeholder **introductions** and **matchmaking sessions**
- High-level EU-Asia **delegation visits**
- **Personalised** interviews identifying individual priorities
- Guided **company visits** and presentation opportunities

Dissemination & marketing support

- **Speaking slots** at GNSS.asia workshops and seminars
- **Demonstration** and **exhibition** opportunities
- **Virtual presentations** through videoconference
- Dissemination of **promotional material** at international events

Market entry support

- Access to the latest **GNSS market information** and **trends**
- Support in identifying **business opportunities** for your business
- Access to **experienced local teams** with in-depth market knowledge
- Access to a broad industry and institutional **stakeholder network**

Communicating opportunities for industrial cooperation

Website relaunch in 2018!

GNSS.asia

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European GNSS Agency

HORIZON 2020