Nomination Template for
Commission Chair Elect 2021-2022
(for the positions of Chair of Commission for the term 2023-2026)

Commission no. 5	
Nominee	
Name	Dr. Ryan Keenan
Country	Australia
Contact Address	PO Box 53, Carlton North, VIC 3054
E-mail address	ryan.keenan@me.com
Age	46 (06/08/1974)
Degrees and educational background	- PhD in Geodesy and GPS Navigation, University College London, UK (2001) - Bachelor of Engineering (First Class with Honours) Civil Engineering Surveying, Nottingham Trent University, UK (1996)
Employment history - current position - previous	Current: - Principal Consultant (Positioning Insights, Australia, 2018-) Previous: - Business Development Manager (Septentrio Satellite Navigation, Australia, 2018-2019) - Director of Program 1 Positioning Commercialisation (Cooperative Research Centre for Spatial Information (CRC-SI), Australia, 2016-2017) - Business Development Manager (Leica Geosystems | Hexagon, Australia, 2012-2016) - Consultant / Project Manager (Leica Geosystems | Hexagon, Sweden, 2008-2012) - Product / Support Manager (Leica Geosystems | Hexagon, Australia/USA, 2001-2008)
Positions of trust - current - previous	Current: - Principal Consultant, Positioning Insights, Australia, (2018-) - Member, UN-GGIM SCoG WG ETCB (United Nations Global Geographic Information Management Sub-

	committee on Geodesy Working Group Education, Training and Capacity Building (ETCB) (2018-) • Member, UN-GGIM SCoG WG Outreach & Communication (OC) (2018-) • Co-Project Lead, International Standards Organisation Technical Committee 20 Sub-committee Working Group 1 on Space operations and systems [ISO/TC20/SC14/WG1] (2019-) Previous: • Business Manager, SmartNet Australia (2014-2016) • Committee Member (industry), Research & Investment Committee (RIC), Cooperative Research Centre for Spatial Information (CRC-SI), Australia, (2016-2018)
Positions in FIG - current - previous	Current: • FIG Commission 5, WG 5.4 GNSS (co-chair) • FIG Commission 5, active member • FIG Capability Development Network Asia Pacific (CDN-AP), active member since 2018 Previous: • None
Other activities in FIG	Attendee, Presenter, Session Chair, and/or Rapporteur: FIG Congresses: 2010, 2014, 2018 FIG Working Weeks: 2016, 2019 FIG Comm5 RFIP: 2014, 2016, 2018, 2019
Field of surveying discipline	Engineering Surveying Geodesy and Navigation Education, Training and Capacity Building SSSI Australia Member #8837 (since 2018)
Nominees Statement:	
Why I want to be a Commission Chair and what I would like to achieve	I am nominating for FIG Chair Commission 5 for the following reasons: 1. To continue to build on the successful inclusive tradition of Commission 5 as the premier platform for international dialogue and discourse amongst the positioning and measurement profession, especially including those who are young, emerging and diverse;

and provide **everyone** with the opportunity to make their contribution – no matter how small.

2. To support and directly contribute to <u>responsible socio-technical developments</u> for the positioning and measurement profession, at the international level, including the creation and dissemination of knowledge, standards and publications (e.g. Reference Frames in Practice (RFIP) seminars, OGC GeodesyML, GNSS CORS, RTCM NTRIP & SSR, Low-Cost GNSS Positioning Systems, etc).

3. To support and directly contribute to <u>sustainable education, training and capacity building</u> for the positioning and measurement community, in particular in collaboration with international groups (e.g. UNOOSA ICG, UN-GGIM, IAG, IGS et al) as well as sister groups within FIG (i.e. Commissions, Networks and Task Forces).

4. To <u>raise the numbers and diversity of Commission 5 members</u> and representatives by leveraging successes into other Regions, with Africa and South/Central America being priority goals in the 2023-2026 term.

5. To increase <u>awareness, alignment and advocacy</u> of the positioning and measurement profession across FIG Commissions, international agencies (e.g. UN-GGIM, FAO), donors (e.g. World Bank, ARDB), and partner professional bodies.   Building stronger connections with private industry at the Commission level, in particular technology companies, must be considered as a concerted effort to amplify this message.

Regarding these goals, I have consulted directly with the current Chair of FIG Commission 5 (Dr. Daniel Roman), to ensure alignment, support, and smooth transition with current activities. Additionally, I have received confirmation that the current Commission 5 Vice-Chair (Mr. Kevin Ahlgren) wishes to continue his role for which his knowledge and efforts are gratefully appreciated.

	Successful Commission 5 initiatives such as the Reference Frames in Practice (RFIP) program, which continues to be successful in raising awareness and competencies in the Regions, must be further nurtured and developed. I feel that such initiatives have significant potential for true global benefit when effectively integrated (via the regional CDNs) together with competency initiatives such as those from partners like UNOOSA ICG and UN GGRF. As positioning technologies become integrated in increasing aspects of today's digital world – both directly in devices and indirectly as part of underlying infrastructure – there is a clear demand for our surveying communities to be at the forefront of these technologies and their usage through continued education, training and awareness. I strongly believe it remains critical for FIG Commission 5 to continue to its leading role in informing and guiding these future developments. With 20 years of experience working within the positioning technology community, across multiple countries and industry sectors, I strongly believe I am well placed to garner the support of the Positioning and Measurement technology community to work together to achieve the above aims.
What I can offer to FIG in support of the aims and objectives of the Commission	I offer the following attributes and key skills to FIG and Commission 5: 1. Continuing Commitment: Since completing higher education 20 years ago, my entire working career has been focused on the development, application and promotion of precise positioning technologies (namely GNSS). I have been a regular contributor in terms of expertise, effort, and support to FIG Commission 5 since 2012 and plan to continue that support regardless whether occupying an elected seat. 2. Globally Connected: Having worked for a number of years in various roles and divisions at a global measurement technology company (Leica Geosystems | Hexagon) as a **GNSS positioning expert**, I bring a comprehensive international network of partners, collaborators, and friends,

	made up of leading practitioners, academics, and thought-leaders across government, private sector, and academia – across Europe, Oceania, Asia and North America.
My key skills	1. <u>Appropriately Qualified and Experienced</u>: I possess a PhD in geodesy and GPS navigation, an undergraduate degree in civil engineering surveying, further supported by practical experiences and education across industry and the surveying world. Just as GNSS CORS technologies are one of the fundamental tools for surveying and positioning activities today, they featured heavily in my first career steps and continue to be a key part of my career legacy to this day. **2.** <u>Continuous Improvement with Strategic Vision:</u> My academic research background affords me an appreciation and respect for the legacy of achievements and developments in positioning and measurement technologies, whilst the 'bigger picture' strategic development mindset honed through industry exposure affords me novel insights into opportunities to benefit the positioning profession – whether it be through products, services or knowledge transfer. **3.** <u>Culturally Aware and Respectful, with an inclusive Leadership Style</u>**:** Having lived in 5 countries (UK, Switzerland, US, Sweden and Australia) so far, and worked in more than 50 others, I have developed a keen awareness of cultural identities across my work life and private life. These many experiences have afforded me a significant set of skills and capabilities in working and collaborating successfully with multiple stakeholders who possess a wide range of backgrounds (such as competencies, languages, cultures and resources). One of my strongest skills is being able to navigate my teams effectively and inclusively through any challenge that arise, in order to deliver successful

	projects in a professional, productive and pragmatic manner.
Any other general comments	In 2018, I set a personal goal to become proactively involved in raising international awareness around the benefits and values that positioning technologies can contribute to achieving sustainable development goals (SDGs), particularly for developing nations; I have been very fortunate to assume the first and only private industry representative on two UN-GGIM SCoG Working Groups (as detailed above).

Nominator

Name of member Association	Surveying & Spatial Sciences Institute (SSSI), Australia
Name and title of contact person	Mr Paul Digney President at Surveying & Spatial Sciences Institute (SSSI)
Contact address	27-29 Napier Close, Deakin, ACT Australia
Email address	Paul.Digney@jacobs.com

Nominator´s statement

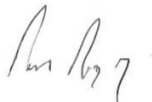|	
Why the association wants to nominate Nominee	Australia is one of several nations that has taken a leadership role in the advancement of PNT. This leadership status is demonstrable by Australia being expected to be one of the first nations to officially activate SBAS v2.0 - the first of the next-generation SBAS (Space Based Augmentation System) services featuring DFMC. DFMC stands for 'dual frequency multi constellation' and uses both GPS and Galileo constellations on their L1 and L5 frequencies. DFMC will provide higher accuracy and higher precision solutions with improved reliability and performance due to the improved ionospheric handling from the second frequency. Australia is also planning to integrate a PPP-RTK capability on their SBAS signal, (acknowledging that the Japanese have already achieved that this year with their QZSS-CLAS signal, and the Europeans are currently testing their HAS (high Accuracy Service).

	Dr Ryan Keenan has been at the forefront of Australia's PNT/GNSS developments and has been active in Australia's advancement, as well as contributing internationally via his various key roles in both Australian bodies and international bodies to advance the application of PNT. These roles include being previously Program Director of Positioning Commercialisation with the Cooperative Research Centre for Spatial Information (CRC-SI) as well as sitting on the powerful Research and Investment Committee of CRC-SI, his current membership of UN-GGIM SCoG WG ETCB and being active in 2 different capacities, and being a Co-Project Lead, International Standards Organisation Technical Committee 20 Sub-committee Working Group 1 on Space operations and systems while being an active member of FIG Commission 5, co-chairing WG 5.4 GNSS. Dr. Keenan was a co-inventor of the Master-Auxiliary Concept for distributing Network RTK corrections, soon after adopted by RTCM SC-104 as the first internationally standardised Network-RTK message type.
	SSSI strongly endorses Dr Keenan's nomination for the Chair of Commission 5 for the coming period 2023-2026. Ryan is an Australian Citizen and an active SSSI member. He received his training in surveying and geodesy in the UK, first completing a Bachelor of Engineering (First Class with Honours) Civil Engineering Surveying, Nottingham Trent University, UK (1996). He later completed his PhD in Geodesy and GPS Navigation, University College London, UK (2001).
	Dr Keenan now has over 20 years of GNSS positioning experiences first with high-precision GNSS receiver manufacturers and more recently as an international GNSS advisor, business developer and marketeer.
	Living in five different countries, and working in over fifty more, Dr. Keenan has amassed a wealth of professional experiences, market knowledge and cultural exposure. Core to these activities, has been a desire to identify, develop and share unique insights into the development

	and implementation of location technologies for the greater good. Additionally, in his earlier career, he has installed more than twenty high-precision GNSS CORS networks for both public and private sector organisations advising on many more. SSSI Australia believes this background and active commitment to GNSS Positioning – both in Australia and internationally makes Dr Ryan Keenan a unique, capable and worthy candidate for the important role of FIG Commission 5 Chair, and we hereby strongly endorse his application.
Support the Association can offer the Nominee (financial and other)	SSSI Australia supports Dr. Keenan in his application, via this formal nomination. If he is successfully nominated, SSSI will also support Dr Keenan by making available SSSI's knowledge repositories, networks, and administrative resources, to support FIG Commission 5 activities, particularly when any events are held within Australia. On a case-by-case, and as-needs basis, consideration will be given to supporting some or all costs associated with Dr. Keenan's execution of the role 2023-2026.
Any other comments	N/A

Signed I hereby certify the above is true and correct	
Date	14 December 2020
Nominee	*Ryan Keenan* Ryan KEENAN
Nominator	*[signature]* Paul Digney