

Appendix A- Table 1: Challenges to the Profession, Members Observations (November 2019)

The whole of our profession needs to recognise change		
<p>Collaboration and resilience is key to changing our mind-set</p>	<ul style="list-style-type: none"> • We need a "futures" investigation to understand our future identity. The question is how we prepare for the future when the preponderance of [our] professional thinking is to maintain the status quo. • To make sure that our profession, the geodetic surveyor remains relevant. • There is a reticence from land professionals to accept change in their working practise • The entire area of Geomatics has become more automated and more technical. • A huge challenge is to change professionals' mind-set. • As spatial data and using is easier for most people; our role will require change. We need to focus in analysing and using land data. • In the future the move towards digital will mean our professional life will be more dynamic, more diverse and more interdisciplinary 	
<p>Global mega trends: the Future has already arrived</p>	<ul style="list-style-type: none"> • Artificial Intelligence, Big Data, War for Talent • Block chain technology and digitization are the trends of our Profession. • The global agenda (SDGs & NU) represents some major opportunities and should be reflected in all aspects of our professional activities; and Megatrends such as the digital transformation, new mobility or new work and attracting the future generations • Climate change is THE challenge. 	
Technology is a defining factor for the profession		
<p>Impact of the 4th Industrial revolution</p>	<ul style="list-style-type: none"> • Technology development is changing the conventional approach to surveying, mapping and land registration. • The modern technologies can menace our profession; everybody is able to gather data. • Maintaining our relevance with the change towards automation, robots, Ai, etc. • Traditional valuation is competing with automated valuation and we will see a drop in the need for valuers 	
Changing business models		
<p>The reduction of our traditional work opportunities</p>	<ul style="list-style-type: none"> • Acknowledging that the surveying environment is changing, surveyors need to be proactive rather than reactive against the fact that any person can use GNSS technology. If our qualification is under threat to do all the surveying work, proactive considerations of how to remain relevant, is necessary • Avoid the false premise that land professionals and surveyors are one dimensional and are only fit for data capture; we are more than this • Gain greater agility and timeliness to avoid new professions taking over core tasks of the profession as a consequence of new technology and new approaches • The role of surveyor especially in cadastre is no longer exclusive. The exclusivity given from legal frameworks is under threat because new technologies and communities may be established as a substitute. 	

	<ul style="list-style-type: none"> • Aim to keep the reputation of surveying and surveyors high during this period of rapid development in new technologies and new business models.
Professional Development is a life long journey	
Who, and how the profession recruits, is changing	<ul style="list-style-type: none"> • The very low number of surveyors being produced to serve the ever increasing demand for our services especially lack of personnel in some countries in Europe, is a challenge • Increase capacity building and technology understanding combined with mentoring well-rounded professionals is the new focus • Our professional community needs to create a "WOW" effect to be attractive and live up to the expectations of the younger generation. This means that education is a prime concerns in many ways: to transmit all the necessary knowledge (that is increasing every day), to develop skills and competencies not limited to technical issues, and to adopt ethical behaviour in many types of situations.
The current university model may no longer meet market expectations	<ul style="list-style-type: none"> • Education in the digital era is the greatest challenge. We should encourage surveyors to improve their digital skills. • Address the fast changing technology amidst rigid curricula for the traditional disciplines • In the immediate future, degrees will not be the key to open jobs.
Lifelong learning will become increasingly important	<ul style="list-style-type: none"> • Emphasise the ongoing quality of continuing professional development (CPD) and codes of conduct (ethics and standards) • Surveyors should be flexible in adopting new methodologies and technological ideas • Enhance professional education and training and make it more accessible
A word for FIG National Member Associations (MA)	
	<ul style="list-style-type: none"> • More direct engagement and sponsorship of our Young Professionals is needed • MA's need to be alive to the changing trends, where the young will dominate the stage, and must therefore be outward-looking instead of being stuck in the old groove of power hunger.

Table 2 Members observations: challenges to the FIG organisation

<p>FIG to bring added Value elements</p>	<ul style="list-style-type: none"> • Ensure the value of land professionals is articulated; given the competition of “free” to join associations • Retain the importance of surveys and measurement, and to promote our professionals • The image of the survey profession needs a refresh and a widening of scope to demonstrate the social issues of space measurement. • Develop the ability to communicate with a broad range of professionals (technical, judicial, social), politicians and civic society
<p>FIG maintaining our ‘brand’</p>	<ul style="list-style-type: none"> • It is of utmost importance that FIG maintains visibility • High visibility not only projecting to the future; but also maintain visibility and value by drawing on our history • Invest in bringing politicians into our audience in particular to help MA’s persuade their nation agencies to invest in surveying. • More emphasis on membership meetings and hold less expensive annual events (Congresses and WW). • The fees are high because we are too expensive in our events and operations. Consider reducing the "touristic" and "cultural" aspects • Registration fees for the FIG Week appear reasonable but not so affordable to some of the developing countries • Keep alive and develop the Forum of Regional Bodies and the Members Association Forum.
<p>FIG organisation challenges</p>	<ul style="list-style-type: none"> • Reducing resources in income and volunteer time • The over reliance on volunteer input has reached its limits. • Consider if it is realistic to continue to attract and increase the membership base, particularly the number of academic members. • There is a looming economic downturn and this may result in membership resignation and financial austerity. This makes involvement and attendance at FIG events difficult for many. • Attracting the young generation