

IOM3 GOVERNANCE MODERNISATION PHASE 4: TECHNICAL COMMUNITIES REVIEW

Background

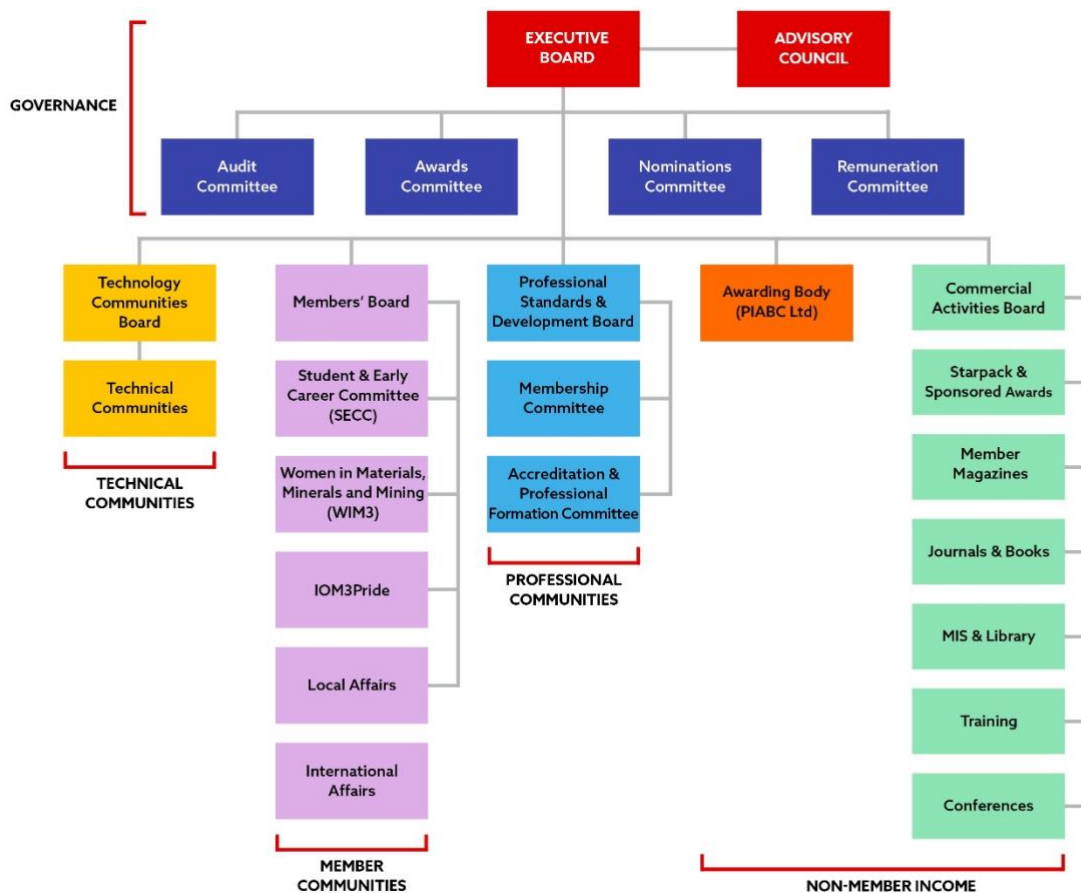
What are the Technical Communities?

Different membership bodies have differing names for special interest groups. Within IOM3, each of these is called a Technical Community (TC). These form a network of special interest groups, which represent the technical interests of IOM3 members. These groups cover the range of technical disciplines which form IOM3 and are run by members for members. As a member you can affiliate to a primary technical community, and as many second-choice ones as you wish, via the MyIOM3 portal on the IOM3 website at www.iom3.org/myiom3.html

TCs form one of the key elements of what a membership based professional body is all about. What do we mean by that statement?

1. They are run by members for members, who have a good understanding of what a member wants from their professional body in terms of technical content, professional development, networking opportunities and links to other external bodies/networks
2. It provides you, as a member, with a way to express your own technical interest as part of a dedicated network of people with similar interests, from all stages of their careers. It provides you with the opportunity both to learn from other professionals but also to give something back to others and the broader community.
3. Selecting your primary and any secondary TCs means that you will get focussed, relevant technical content, knowledge, event suggestions direct to your mailbox and when you log on to the web site.
4. Much of the technical content produced and delivered by IOM3 is sourced from members within the TC network, who have their fingers on the pulse of what is happening in the world at large.
5. Many of the events IOM3 stages/hosts are delivered from ideas spawned within the TC networks, and we are always looking for fresh ideas, different ways to do things.
6. IOM3 uses the TC network to bring together the technical expertise of its members when it is seeking to contribute to policy and public discussions of relevance to professionals in materials, minerals, and mining.

TCs form the first of the four 'pillars' of IOM3, alongside member networks, professional affairs and commercial activities as shown below.



Why is IOM3 reviewing the structure and operation of the Technical Communities?

The research undertaken during the first phase of the review highlighted that the need for the review was long overdue. Due to the numerous mergers over many years with other professional bodies, the existing system is somewhat haphazard, unwieldy, and its coverage is not uniform. For example, there are 41 technical community groups, with a range of group names e.g. some are a Group, Society, Division, Association. There is also a range of both size in terms of affiliated IOM3 members, but also number sitting on the boards/committees that govern the day-to-day activities.

The evidence provided a need for a more structured, consistent approach across the entire range of TC groups’ operation, structure and identity.

The objective of the review was to take a considered view as to how the TCs are structured and operate and to make recommendations for change. At the core is how the various activities should, and actually do reflect the charitable purpose and corporate strategies of IOM3 and the needs of members currently and going forward.

What was the review process and what recommendations came out of the review?

The review started in the summer of 2019 at the request of the trustees. The Specialist Support Team, along with various team members and key members of IOM3, involved with the groups, undertook a data capture exercise. Information was collated against the then objectives that each group operated under as part of the Technology Communities Board (TCB), which heads up this pillar of IOM3 governance.

The research findings that came out of this body of work were discussed within IOM3 governance, firstly with the TC boards/committees, then the TCB, Advisory Council and finally Executive Board (the IOM3 board of trustees). This process took up most of 2020, and the first part of 2021 as extensive discussions/workshops/meetings were held across all the groups, feedback from the groups was collated and detailed proposals put to the Advisory Council and onwards to EB, with final approval gained in late spring 2021.

What were the recommendations that were approved and the rationale behind them?

1. The purpose and the objectives of all TCs of IOM3

The key word that came out of the review, time and time again was the need for greater **consistency**. What became very clear from the outset, was the need for a reduced number, of focussed, consistent objectives that each and every TC group should be working towards. Under the “old” terms of reference for example there were 15/16 objectives with no clear prioritisation, this needed to be addressed as a matter of urgency. The objectives that were identified as being core to the delivery of a valued benefit and service to members by each TC were:

- i. The production and delivery of relevant, timely and high-quality technical content, however this is defined, including conferences and events, *Materials World/Clay Technology* articles, podcasts, blogs, webinars etc.
- ii. Providing networking opportunities with like-minded individuals with similar relevant technical interests
- iii. Spreading the word about IOM3 membership, mentoring, supporting outreach activities, etc.
- iv. Supporting professional development, including Awards judging, developing training resources, accreditation and assessor work, etc.
- v. Increasing the external influence of the Institute, including representing IOM3 on other bodies, providing technical input to public policy or media enquiries, etc.

2. Define the leadership group structure for each TC ensuring they meet the current best practice/policy in place for diversity and inclusion

Under the watchword of consistency there was a clear need for each TC to have a clearly defined leadership group (board) structured such that:

- i. Each TC will have a board, normally with a maximum of fifteen participants, each appointed for a renewable four-year term, staggered to provide coverage wherever possible. Ideally all will be members of IOM3 but a maximum of two participants may be non-members.
- ii. Board make-up will align with, and conform to, current IOM3 policies related to inclusion, diversity and equality.
- iii. Boards may also co-opt participants to represent other relevant organisations as appropriate to provide advice and assistance, but these individuals will not have any voting rights or count towards any quorum. As these boards play such a significant part in the life of IOM3, it is important that their decisions are made by members of IOM3 in good standing. Therefore, this provision restates the existing limits on participation by non-members. However, it is also clear that representatives from other relevant organisations (other professional bodies, regulators or Government Departments, etc) can add value. The same is true for event organising committees and the like, where there can either be a clear majority of IOM3 members, or if that is not possible, the relevant TC board must ratify any proposed decisions.
- iv. Boards may create ‘task and finish’ groups for specific activities (e.g. to organise an event). They can co-opt others (including non-members of IOM3 where their expertise is needed and justified)

onto these as required, though the board must ensure that decisions are made by members of IOM3 in good standing.

- v. Key board roles will be linked to areas of the IOM3 Strategy and to areas specific to that TC.
- vi. The review identified the need to have a strong leader and as such each TC board will have a Chair, appointed by trustees via the process introduced in 2019-20 for a renewable four-year term. The Chair must be a member in good standing of IOM3 and will cease to be the Chair should this change.
- vii. Where a board considers that one or more areas its TC covers would benefit from more detailed attention, it can propose to the Executive Board the creation of a “Technical Champion” for a specific subject, who must be a member of IOM3 in good standing and will have an ex-officio seat on the relevant board.
- viii. Boards can have virtual sub-committees at the discretion of the TC chair

3. IOM3 support for meetings of the TC leadership groups

Experience gained as a result of the pandemic has refined the use of virtual event and meeting software. IOM3 supports the use of Microsoft Teams and Zoom across the groups. Virtual meetings have allowed more members to engage and attend taking up less of their time, are more inclusive and reduce the carbon footprint. It also costs less for IOM3. This will be constantly reviewed to ensure continuity of service is provided.

TC boards will be expected to meet virtually most of the time. In addition, IOM3 will normally fund one physical (or hybrid) meeting each calendar year, ideally alongside a board-organised conference or event.

4. All TCs will be named IOM3 XXXXXXXX Group and will adopt the latest IOM3 visual identity

Once again, the key objective is to provide consistency in the naming and visual identity of each group. It makes it explicit to members and to the broader communities that each group is a clearly identified part of IOM3, with a common visual identity. This will facilitate the desire to increase the awareness of and the influence IOM3 has in the broader science and engineering communities, as well as with the various Governments. This visual identity has already been rolled out on the IOM3 website and will be used in event material, etc going forward.

5. The number of TCs will be reduced and some will change to ensure good coverage of IOM3 member interests now and for the immediate future

The key step was to identify the number of TCs that adequately covers the range of IOM3 member interests and provides both breadth and depth of coverage. The proposed structure is outlined in Table 1 shown below. Table 1 sets out the resulting approved structure to have twenty-two TCs with their proposed names, as opposed to the current 41. Reference to previous TC names will be maintained on web pages, strap lines and any promotional materials, social media channels to maintain group legacies and historical associations.

This structure was felt to offer both the means for members to identify where you sit in the overall structure, but also to provide a viable, joined up methodology in terms of working together, for the interest of members.

Table 1: NAMING FOR EACH TECHNICAL GROUP

<p>IOM3 APPLIED EARTH SCIENCES GROUP</p> <p>The IOM3 Applied Earth Science group provides a focus for professionals involved in locating the earth’s resources and how they can be extracted efficiently with minimum impact on the landscape and environment.</p>	<p>IOM3 BIOMEDICAL APPLICATIONS GROUP</p> <p>The IOM3 Biomedical Applications Group represents people with interests in the application of materials across the multidisciplinary field of biomedical applications.</p>	<p>IOM3 CERAMICS GROUP</p> <p>The IOM3 Ceramics Group provides a focal point for, and represents the interests of, relevant academic and industrial individuals helping develop a detailed understanding of the underpinning science behind the manufacture and use of all ceramic materials.</p> <p>Includes Ceramics Society, Cementitious Materials, Ceramic Science Committee & ICTa.</p>
<p>IOM3 COMPOSITES GROUP</p> <p>The IOM3 Composites Group provides a forum and focus for technical information and knowledge exchange and networking for individuals working across the spectrum of composite materials.</p> <p>Includes British Composites Society (BCS).</p>	<p>IOM3 CONSTRUCTION MATERIALS GROUP</p> <p>The IOM3 Construction Materials Group is a multi-disciplinary group providing a forum for the exchange of information, knowledge, and state-of-the-art industrial practice on all aspects of construction materials including iron and steel, polymers, heavy clay, cement and concrete, timber and wood products.</p>	<p>IOM3 DEFENCE SAFETY & SECURITY GROUP</p> <p>The IOM3 Defence, Safety and Security Group provides a forum for the exchange of information, knowledge, and state-of-the-art practice on all aspects of the science and engineering of materials used in defence, safety and/or security applications.</p>
<p>IOM3 ENERGY MATERIALS GROUP</p> <p>The IOM3 Energy Materials Group is a cross cutting group that provides a focus on materials issues in energy supply whether it be materials supply or synthesis. Including battery production, high temperature turbines, nuclear power stations, wind, marine and solar.</p>	<p>IOM3 ENERGY TRANSITION GROUP</p> <p>The IOM3 Energy Transition Group provides a focus for developing technologies to facilitate decarbonisation and help reduce the impact of climate change, whilst mindful of the energy needs of society.</p>	<p>IOM3 IRON & STEEL GROUP</p> <p>The IOM3 Iron & Steel Group supports people working in the iron and steel and related industries by providing a network for the exchange of knowledge on all aspects of steel production, processing, and applications.</p> <p>Includes Iron & Steel Society (ISS) and High Temperature applications¹.</p>
<p>IOM3 JOINING TECHNOLOGIES GROUP</p> <p>The IOM3 Joining Technologies Group provides a network for all aspects related to the science,</p>	<p>IOM3 MATERIALS CHARACTERISATION & PROPERTIES GROUP</p> <p>The IOM3 Materials Characterisation & Properties Group provides a technical forum to share knowledge and best practice related to the</p>	<p>IOM3 MATERIALS PROCESSING & MANUFACTURING GROUP</p> <p>The IOM3 Materials Processing and Manufacturing Group provides a networking group covering all</p>

<p>engineering and processes associated with joining two or more materials.</p> <p>Includes Society of Adhesion and Adhesives (SAA) and IOM3 Brazing Network.</p>	<p>understanding of material properties and how they can affect the subsequent choice and use of engineering materials.</p> <p>Includes Materials Failure Investigation Group (MFIG), Materials Chemistry, Nano, Smart Materials & Systems (SMASC), and Structure & Properties of Materials.</p>	<p>technical aspects of the conversion of raw materials into finished/semi-finished products.</p> <p>Includes Particulate Engineering (PEC), Casting and Solidification (CSC), Advanced Sheet Metal Forming (ASMFC), and Bulk Metal Forming (BMFC).</p>
<p>IOM3 MINERAL PROCESSING & EXTRACTIVE METALLURGY GROUP</p> <p>The IOM3 Mineral processing and Extractive Metallurgy Group provides a forum to share knowledge and best practice for people involved with the processing of minerals to produce metals and other marketable products.</p>	<p>IOM3 MINING TECHNOLOGY GROUP</p> <p>The IOM3 Mining Technology Group is a technical network within IOM3 to support the mining and extractive industries worldwide by providing a focus for the promotion of, and exchange of knowledge on, all aspects of mine development, mine production, mine closure, mining technology and other mining industry related matters.</p>	<p>IOM3 NATURAL MATERIALS GROUP</p> <p>The IOM3 Wood and Natural Materials Group provides a technical network for people working with natural and timber-based materials, from basic research to commercial application.</p> <p>Includes Natural Materials Association (NMA).</p>
<p>IOM3 NON-FERROUS & LIGHT METALS GROUP</p> <p>The IOM3 Non-ferrous & Light Metals Group provides a focus for the sharing of knowledge related to the production and usage of non-ferrous metals and alloys (nickel-based superalloys, copper/copper alloys as well as light metals such as aluminium- and titanium-based alloys). The network also looks at processing, application, recycling, and reuse.</p> <p>Includes Light Metals Division (LMD) and High Temperature applications¹</p>	<p>IOM3 PACKAGING GROUP</p> <p>The IOM3 Packaging Group provides a technical network for the sharing of technical knowledge and best practice related to all aspects of packaging design, production, processing, application, and recycle/reuse.</p>	<p>IOM3 POLYMER GROUP</p> <p>The IOM3 Polymer Group is a community of professionals with a shared technical interest in polymers. The group supports the polymer supply chain but excluding elastomers by providing a focus for the exchange of knowledge on all aspects of production, processing, applications, and end of life. It covers all technical, educational, and professional considerations related to polymers.</p> <p>Includes the non-elastomer elements of the Polymer Society, and the Polymer Processing and Engineering Committee (PEC).</p>
<p>IOM3 ELASTOMERS GROUP</p> <p>The IOM3 Elastomers Group is a community of professionals with a shared technical interest in Elastomers. The group provides a focus for the exchange of knowledge on all aspects of production,</p>	<p>IOM3 SURFACE ENGINEERING GROUP</p> <p>The IOM3 Surface Engineering Group is a focus for sharing knowledge and best practice to allow understanding of surface engineering/science and for technologies designed to modify the surface</p>	<p>IOM3 SUSTAINABLE DEVELOPMENT GROUP</p> <p>The IOM3 Sustainable Development Group provides a forum to debate methodology/strategy towards sustainable development goals. Includes environmental, social and economic assessment</p>

<p>processing, applications and recycling/re-use, and end of life.</p> <p>Includes the Rubber In Engineering Group (RIEG).</p>	<p>properties of metallic and non-metallic components for decorative and/or functional purposes.</p>	<p>techniques (including Life Cycle Assessment). Covers all materials, market sectors and stages of the materials cycle. Provides holistic view of low carbon and resource efficiency strategies and considers the education and training needs of the IOM3 community.</p>
<p>IOM3 WOOD TECHNOLOGY GROUP</p> <p>The IOM3 Wood Technology Group provides a technical network for people working with timber-based materials, from basic research to commercial application.</p> <p>Includes the Wood Technology Society (WTS).</p>	<p>Includes the Corrosion Committee, Coatings and Surface Treatments Committee (CSTC) and Vitreous Enamellers Society (VES).</p>	<p>Includes Resources Strategy Group (RSG).</p>

¹The former High Temperature Materials Committee is split across iron and steel and non-ferrous metals

In addition to this, IOM3 will also adopt a refreshed set of over-arching technical themes, which draw together all activities, providing a commonality of purpose, currency, flexibility and will be reviewed regularly to ensure it is accurate. These themes are shown in Table 2 with examples of what is included. These themes will be developed further over the coming period. Along with the choices members make of primary and secondary TCs, sector and materials interests, etc, these will help make technical content more accessible to all.

Table 2: TECHNICAL THEMES

<p>TRANSPORT</p> <ul style="list-style-type: none"> - Aerospace - Automotive - Future Transport - Power systems - Transport infrastructure 	<p>INFRASTRUCTURE & THE BUILT ENVIRONMENT</p> <ul style="list-style-type: none"> - Construction - Power transmission - Tunnelling - Waste management 	<p>MEDICAL & HEALTH</p> <ul style="list-style-type: none"> - Aging Population - Biologically active coatings and surfaces - Medical devices and implants
<p>ENERGY</p> <ul style="list-style-type: none"> - Batteries - Decarbonisation - Energy transition - Future Fuels - Hydrogen economy - Nuclear - Renewables 	<p>MATERIALS & MANUFACTURING</p> <ul style="list-style-type: none"> - Additive manufacturing - Characterisation and Testing - Metals, polymers, ceramics, natural materials - Modelling and simulation/informatics - Nanotechnology - Processing/re-use - Research and development - Smart systems 	<p>MINING & RAW MATERIALS EXTRACTION</p> <ul style="list-style-type: none"> - Earth science - Exploration - Finance - Geotechnical engineering - Health and safety - Land remediation - Mine development - Mineral processing - Mining technology - Resource and Reserves reporting - Secondary raw materials
<p>ENVIRONMENT, SUSTAINABILITY & THE CIRCULAR ECONOMY</p> <ul style="list-style-type: none"> - Air/soil/water quality - Climate change (adaptation & mitigation) - Energy/Resource/Water efficiency 	<p>SKILLS & PROFESSIONAL DEVELOPMENT</p> <ul style="list-style-type: none"> - CPD - Recognition of Competence - STEM Education and Outreach - Training and Skills 	<p>DATA, DIGITILISATION & AUTOMATION (including industry 4.0)</p> <ul style="list-style-type: none"> - Artificial intelligence - Big Data - Digitisation/digitalisation

A schematic of how this will work can be seen below after in the “IOM3 wheel” below, which works better as an animation (available at bit.ly/3hgL4eC)

The essence of the wheel is that IOM3 with its membership at the core, radiates out through the TCs such that any member can interact with any group they choose at a given moment in time. The TCs (Table 1) in turn all contribute to the over-arching technical themes which flow around the rim of the wheel in a joined up way.

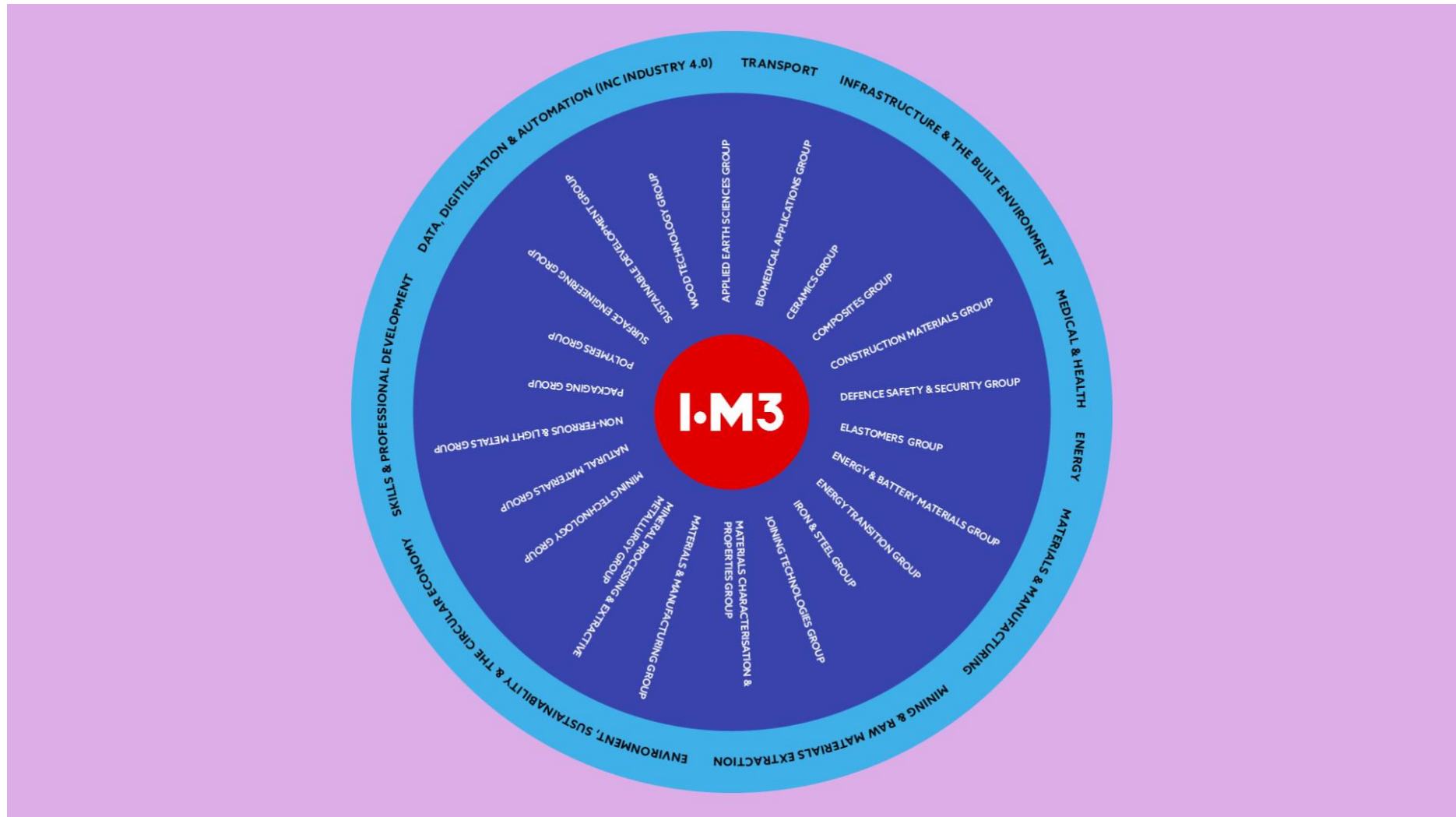


Diagram 1: the IOM3 wheel

1. What is in it for me?

The rationale behind the review and subsequent proposals was to provide members with a clear sense of identity/belonging, and opportunities to get closely involved and network with others with similar or related interests. The intention is that having a smaller number of focussed groups will provide a depth not seen before, and a chance to steer IOM3 activity in key ways such as content and events. IOM3 wants you, our members, to feel proud that you are part of a vibrant, forward looking, modern thinking organisation that has your interests at heart, and is flexible, adaptable and listens to your needs and that of the community we are part of. Help IOM3 to help you, get affiliated to the new groups, help develop their activities, have your voice heard.

2. What is in it for IOM3?

IOM3 will only thrive if we have viable networks with a consistent focus, delivery and the needs of our members at the core of every decision. Having a vibrant network of Technical Communities will provide benefits to members, who hopefully will be more inclined not to just renew their memberships, but also be proud to act as ambassadors and spread the word. By doing this we can build up the awareness of other parties such as Government agencies, regulators, the media that IOM3 is the go to professional body for help and guidance on all aspects of materials, minerals and mining.

Background explanation/notes:

1. The groups above in Table 1 are sorted in alphabetical order. Each group has equal standing in the structure.
2. The new IOM3 website allows members a wider choice of group affiliation. A member of IOM3 will be required to pick one “primary group”, and may add as many other groups as they wish. This can be changed as and when a member decides their interests have/might change, through the MyIOM3 online portal
3. This proposal, structure and new systems will allow a member to have complete flexibility and choice.
4. The structure and systems provide discipline coverage with flexibility against any future trends/member needs
5. Structural rationale:
 - a. The proposed structure has 22 groups compared to the current 40, with flexible clustering, readily adapted as technology progresses and the needs of members or IOM3 change
 - b. A member can readily identify with the area(s) they are interested in now or potentially in the future, through the online member portal
 - c. The structure reflects the very broad nature of the disciplines covered by IOM3
 - d. Scope to add (or remove) groups as needs dictate
 - e. Clustering of groups will allow efficiencies.

We would welcome your thoughts on the following:

Question 1: Do you agree with the purpose and objectives of the Technical Communities?

Question 2: Do you agree with the range and coverage outlined for each Technical Community in Table 1 and, where appropriate, which Technical Communities in the existing structure will make up this Group? If not, what alternative do you suggest and why?

Question 3: Do you agree that the nine over-arching themes outlined in Table 2 adequately cover the range of technical areas? If not, what changes would you propose and why?

To respond to these questions please take our survey at:

www.surveymonkey.co.uk/r/IOM3-Phase-4.