



NSAI

ANNUAL REPORT 2021

NSAI CONSULTATIVE COMMITTEE
NSAI/TC 49 – MANUFACTURING &
MACHINERY

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1 Chairman's Statement

In 2020 NSAI offered the position of Chairman to Dr Matt Cotterell, who accepted the role and Chaired the first meeting of NSAI/TC 49/SC 03 on the 2021-11-17.

Dr Matt Cotterell is Head of the Munster Technological University (MTU) School of Mechanical, Process & Electrical Engineering. Dr Cotterell is involved in the development and management of programmes and research within the constituent Departments in the School: Mechanical, Biomedical & Manufacturing Engineering; Process, Energy & Transport Engineering; Electrical & Electronic Engineering and the Centre of Craft Studies.

2 Introduction

The Manufacturing and Machinery Standards Consultative Committee has been established by the board of NSAI to facilitate and manage this sector of Industry. This Consultative Committee can propose the establish of a Technical Committee or Sub-Committee where it deems it necessary to track the standardization activities in a specific area. It will provide a strategic direction on new opportunities and challenges arising from Industry 4.0 for standardization, including priority areas for NSAI national mirror committees to focus on for maximum national impact. In 2019, Future Jobs Ireland acknowledged these challenges and opportunities, by publishing Ireland's Industry 4.0 Strategy 2020-2025 the Government's economic pathway to ensure that Ireland is well placed to prosper in a rapidly changing global economy. This Consultative Committee will advise and provide guidance on the key strategic actions assigned to NSAI in this National Strategy.



Standards contribute greatly to urgently addressing global emissions

As Industry 4.0 will be critical to developing Ireland's manufacturing sector while helping to maintain its competitiveness. Standards are a key enabler for the digitisation of the manufacturing industry. Ensuring that Ireland is at the forefront of emerging technologies, they will help provide indigenous companies and academia with a voice on the European and International Standardization Platforms. As manufacturing processes are now being digitized there is a significant opportunity for Ireland and NSAI to help shape the future of the sector which is heavily dependent on standards.

According to the Central Statistics Office figures, in 2019 the industrial economy in Ireland contributed more than one third of Gross Value Added (GVA) 34.9% vs. the EU average of 19.7% while the previous year performance shows a continuation of 35.1% vs. EU average of 19.5%. The top 10 industrial enterprises accounted for 51.7% of all production in Ireland in 2019. While the top 50 industrial enterprises in Ireland represented 75.4% of the overall NSV with a value of €101.5 billion ¹.

This Consultative Committee will have the opportunity for additional representation in the standardization programme by National Technical Bodies, against the background of national importance and developments in the sector.

¹ Irish Industrial Production by Sector 2019 - CSO - Central Statistics Office

3 Scope of SCC

This Manufacturing & Machinery Standards Consultative Committee will focus on supporting Irish business through optimising a standards vision to provide the Irish manufacturing community with relevant standards related information and information on current and future standardization activities.

The Manufacturing & Machinery Standards Consultative Committee is dedicated in providing NSAI with expert advice on general strategy, Industry trends relating to Manufacturing and Industry 4.0 and how standards can support the Irish manufacturing industry. This will create a strategic framework for prioritizing standards development work and resource deployment.

The Manufacturing & Machinery Standards Consultative Committee will not produce indigenous Irish Standards. This Consultative Committee will give guidance on the development of a coherent NSAI standards development strategy in Advanced Manufacturing and Industry 4.0 by advising on alignment and linkages with other relevant national policy initiatives and academic and enterprise developments. The Consultative Committee is tasked with the following:

The Consultative Committee will understand the overview of International and European standardization in 'Advanced Manufacturing', including Smart / Digital Manufacturing (aka 'Industry 4.0'), IIoT, Robotics, Additive Manufacturing and enabling technologies such as Cloud Computing and Distributed Platforms and Artificial Intelligence;

- ✓ The Consultative Committee will consider European and international advanced manufacturing technology standardization programmes and national participation in such programmes;
- ✓ The Consultative Committee will advise and support NSAI on matters relevant to Manufacturing and Industry 4.0 standardization;
- ✓ The Consultative Committee will advise NSAI on the dissemination of information to the Irish manufacturing industry and relevant stakeholders; and
- ✓ The Consultative Committee will assist NSAI in supporting joint ventures and collaborations that support the Irish manufacturing industry.

The Consultative Committee will monitor the activities of NSAI Standards Committees within the Manufacturing Sector. Recommendations can be made to NSAI highlighting specific areas of standardization that may be strategic beneficial for the Irish Manufacturing Sector.

The Consultative Committee will advise NSAI in implementing the strategic actions from applicable Irish Government Strategies and Ireland's Industry 4.0 Strategy 2020-2025, see Annex A.

The Consultative Committee will produce an annual report. The annual report will report on the activities of the NSAI Standards Committees within the Manufacturing Sector.

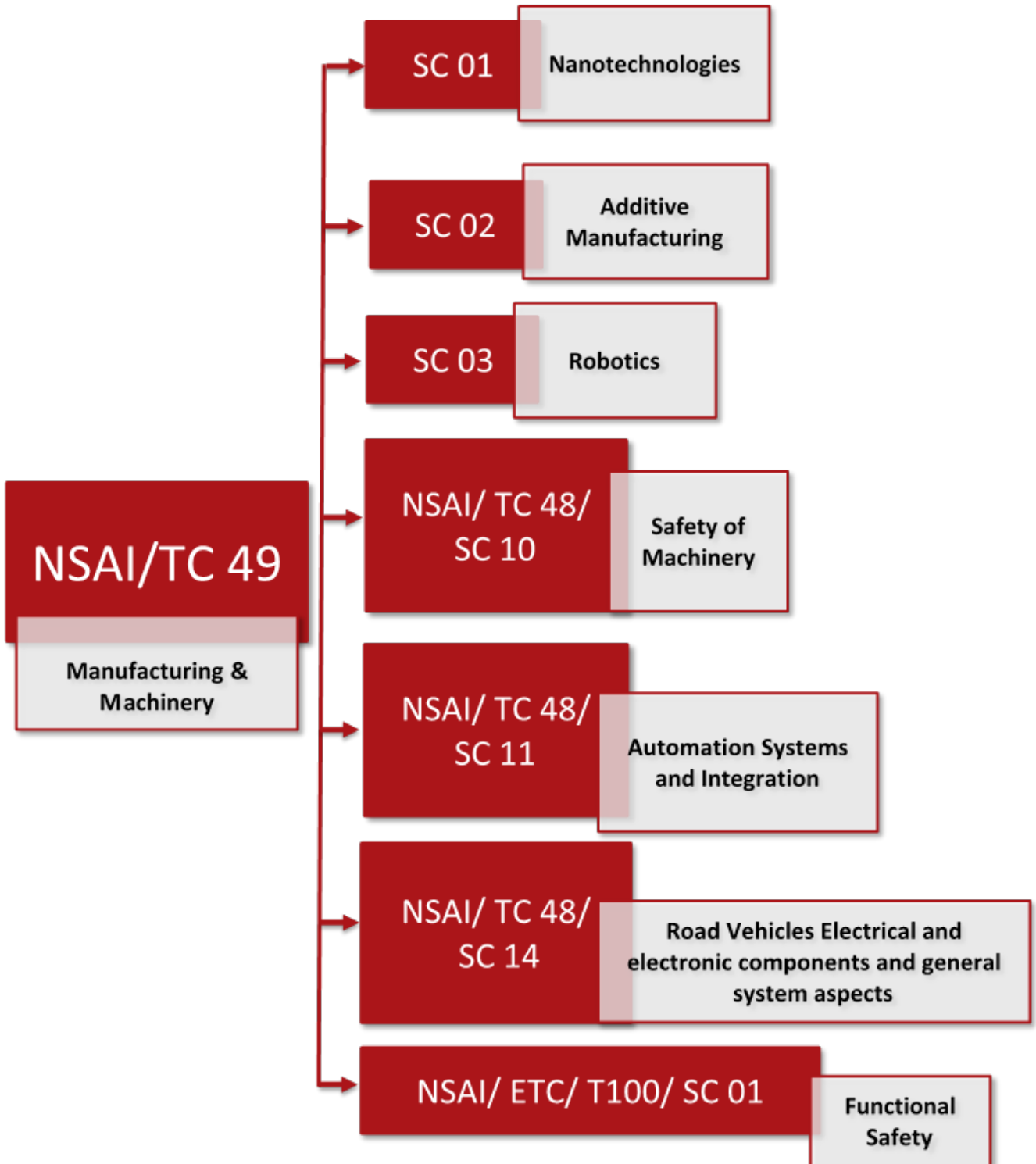
The Consultative Committee will play an advisory role to NSAI providing standards related information that will increase Irish manufacturing companies and SME readiness for future production, while seeking to take full advantage of the evolving transformation opportunities for Industry 4.0 and adopting new manufacturing advancements.

The Consultative Committee may consider liaisons with other NSAI Consultative Committees and Technical Committees.

4 Structure and Membership

4.1 Structure

The Figure below Illustrates the structure of the National Committee:



4.2 Members

The list below are the members for the year 2021:

Organisation	Role
NSAI	Secretary
NSAI	Secretary Support
MTU	Chairman
IDA	Committee member
Pilz	Committee member
IMR	Committee member
Enterprise Ireland	Committee member
Dromone Engineering Limited	Committee member
SFI Confirm	Committee member
NUI Galway	Committee member
Analog Devices	Committee member
Johnson & Johnson	Committee member
DETE	Committee member

5 Summary of 2021 Activities

5.1 National

5.1.1 Meetings

The inaugural meeting was conducted via web-conferencing meeting facilities due to the restrictions caused by Covid-19.

Meeting No.	Date	Minutes Reference ** optional**
1	17 th November 2021	N 10

5.1.2 National Work

The Standards Committee will not draft any National Standards. The Manufacturing & Machinery Standards Consultative Committee is dedicated in providing NSAI with expert advice on general strategy, Industry trends relating to Manufacturing and Industry 4.0 and how standards can support the Irish manufacturing industry. This will create a strategic framework for prioritizing standards development work and resource deployment.

5.2 International/Regional

5.2.1 Meetings

The Standards Committee is not a National Mirror Committee for any ISO, CEN or IEC Committee. This Committee is a Standards Consultative Committee and is dedicated in providing NSAI with expert advice on general strategy, Industry trends relating to Manufacturing and Industry 4.0 and how standards can support the Irish manufacturing industry.

5.2.2 International/Regional Work

The Secretary produced a Sectoral Study of Standards in Manufacturing to assist the Consultative Committee that provides an overview of the Industry 4.0 from a standards perspective, following the structure of 15 areas of focus.

It starts with a summary on what the "fourth industrial revolution" is, followed by an overview of the manufacturing sector in Ireland in 2019 and information on Ireland's digital transformation. It highlights European Policies and National Strategies and their potential impact on the industry as well as enabling changes to the current landscape.

The report highlights the importance of standards by emphasizing on the links and benefits achievable through standards and innovation, that can positively affect standardization. It also mentions some of the current funding mechanism that are available to support this action. The German Standardization Roadmap is referred to for its overview of standards and specifications relevant to Industry 4.0 with some strategic recommendations to address gaps and normative inconsistencies.

The relationship between standards and regulations is then detailed, exploring also how standards can support organizations' objectives. Specific attention is given to the Machinery Directive, where a comprehensive view into the latest ICT and emerging technologies from the "Impact assessment study on the revision of Directive 2006/42/EC on machinery" is listed along with its current shortcomings. The future revision of the directive is then examined through the recommendations of the Machinery Working Group.

The current standards and standardization process is then comprehensively examined and eleven enabling technologies are listed. The current and future applications of these technologies are investigated and linked to standards committees. The key relationships between emerging technologies and standardization are addressed and links are provided to published standards and current standardization activities.

Finally, this document maps the standardization activities of the European standards setting organizations, the International Organization for Standardization, and the International Electrotechnical Commission with respect to NSAI's National Mirror Committees.

This document is publicly available from NSAI's website at the following link [Sectoral Study of Standards in Manufacturing](#).

5.2.3 International/Regional Standards Reviewed

The Standards Committee is not a National Mirror Committee for any ISO, CEN or IEC Committee. This Committee is a Standards Consultative Committee and is dedicated in providing NSAI with expert advice on general strategy, Industry trends relating to Manufacturing and Industry 4.0 and how standards can support the Irish manufacturing industry.

5.2.4 International/Regional Voting Results

The Committee is an advisory Committee and does not vote on international standards.

5.3 Regulatory Development/Update

Wednesday 21st April, the European Commission presented its proposal for a new Regulation on machinery products. The main legal changes are the transformation of the legislation into a

Regulation, with alignment to the New Legislative Framework. The regulation will facilitate the homogenous application throughout the EU. and an alignment with the horizontal rules on the responsibilities of economic operators, market surveillance, accreditation, as well as the role of notified bodies and conformity assessment procedure.

It will further empower the Commission to elaborate technical specification to give the presumption of conformity with the relevant essential health and safety requirements in the absence of harmonised standards.

This new Machinery Regulation will ensure that the new generation of machinery guarantees the safety of users and consumers, and encourages innovation. This is achieved by adapting the essential requirements of the legislation to the latest developments in technology, including the collaboration between human and robots and AI.

6 Irish Publications/Reviews

6.1 Publications

National Standards will not be produced by this Committee as the International Standards will be published as European Standards adopted as Irish Standards.

6.2 Reviews

The Committee will review the standardization activities of each of the Technical Committees as outlined in the reporting structure of the Committee in 4.1.

7 Work programme for 2022 onwards

The Consultative Committee will understand the overview of International and European standardization in 'Advanced Manufacturing', including Smart / Digital Manufacturing (aka 'Industry 4.0'), IIoT, Robotics, Additive Manufacturing and enabling technologies such as Cloud Computing and Distributed Platforms and Artificial Intelligence;

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8 Additional Information

As manufacturing processes are now being digitized there is a significant opportunity for Ireland and NSAI to help shape the future of the sector which is heavily dependent on standards. NSAI's Board has approved the establishment of a Sectoral Consultative Committee which is tasked with serving the needs of the Manufacturing Sector through the use of standards for the firm adoption of Industry 4.0 Technologies.

The Irish Government is committed to supporting the Manufacturing Sector. Ireland's Industry 4.0 Strategy 2020-2025 sets out the Government's new economic pathway to ensure that Ireland is well placed to prosper in a rapidly changing global economy. NSAI is assigned strategic actions to help in the implementation of the strategy where by 2025 Ireland will be a competitive, innovation-driven manufacturing hub at the frontier of the fourth industrial revolution. This Consultative Committee will advise NSAI in implementing these key actions from applicable Irish Government Strategies and Ireland's Industry 4.0 Strategy 2020-2025.

The CEN-CENELEC-ETSI Coordination Group on Smart Manufacturing (SMa-CG) was created to coordinate the European standardization activities relating to new technologies in the field of manufacturing. It is a joint group of CEN, CENELEC and ETSI which advises the CEN-CENELEC Technical Boards and the ETSI Board. At the 8th meeting of the CEN-CENELEC-ETSI Coordination Group, the Secretary gave a detailed presentation on NSAI's Sectoral Study of Standards in Manufacturing. The presentation was well received, and members requested links to download the document.