



NSAI

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ANNUAL REPORT 2019

**NSAI TECHNICAL COMMITTEE
NSAI/TC 49/SC 03 - ROBOTICS**

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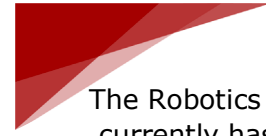
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1 Chairman's Statement

NSAI currently convenes the Robotics committee. A Chairman will be appointed by NSAI in 2020.

2 Introduction

This Standards Committee was created as a Working Group to feed into the National Steering Committee on Collaborative Robotics by following the activities of [ISO/TC 299 Robotics](#). The National Steering Committee on Collaborative Robotics was created by the IDA with the purpose of assisting the Irish manufacturing industry with the introduction of industrial robots into collaborative operations and applications with human workers.



The Robotics industry currently has 5 of 21 experts involved in international work

The primary focus of the Standards Committee is on Industrial Robotics at an ISO level and the development of safety requirements through Standards, that will enable the introduction of humans into the workspace of an industrial robot. The workspace of an industrial robot has traditionally been a restricted space. In collaborative application, this workspace will be redefined as a shared space. The safety of the human worker is the ultimate concern.

3 Scope of TC

Standardization in the field of robotics, excluding toys and military applications.

This committee will not produce indigenous Irish Standards. The national committee will participate in the development of International Standards at an ISO level.

The International Standards published by ISO will be adopted as European Standards and harmonised to the Machinery Directive where applicable. NSAI will then adopt these European Standards as Irish Standards.

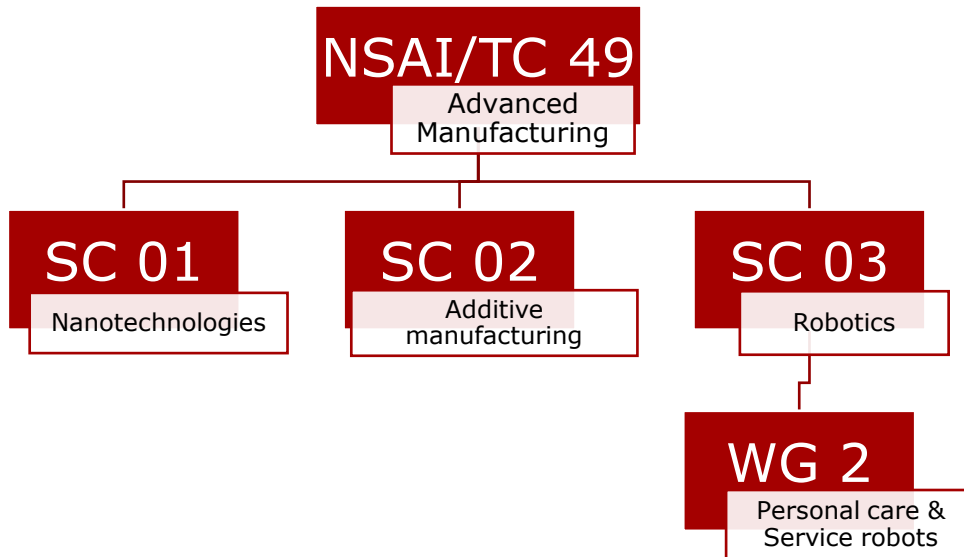
The committee mirrors the following international committees:

Committee Name	Committee Title
ISO/TC 299	Robotics
ISO/TC 299/ WG 1	Vocabulary and characteristics
ISO/TC 299/WG 2	Service robot safety
ISO/TC 299/WG 3	Industrial safety
ISO/TC 299/WG 4	Service robot performance
ISO/TC 299/WG 6	Modularity of service robots

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 2019:

Organisation	Name	Role
NSAI	Fergal Finn	Secretary
NSAI	Barry Cox	Secretary
Trinity College Dublin	Eamonn Bourke	Committee member
ITS Ltd	Dan Buckley	Committee member
Pilz	Juergen Bukowski	Committee member
KUKA Robotics	Brian Cooney	Committee member
Health & Safety Authority	Alan Costelloe	Committee member
Trinity College Dublin	Mark Culleton	Committee member
Schivo Group	Jonathan Downey	Committee member
KUKA Robotics	Colin Dullaghan	Committee member
Eiratech	Paddy Hanlon	Committee member
IMR	Ken Horan	Committee member
Eirtech	Markus Kohler	Committee member
ABB Robotics	Shane Loughran	Committee member
Rockwell	Brian Maher	Committee member
NCR	Michael Martin	Committee member
Trinity College Dublin	Conor McGinn	Committee member
Analog Devices	Tom Meany	Committee member
University Limerick	Leonard O'Sullivan	Committee member
UCD	Nikolaos Papakostas	Committee member
Somex Automation	Michael Wall	Committee member
DCU	Paul Young	Committee member
Boston Scientific	Julio Zanon	Committee member

5 Summary of 2019 Activities

5.1 National

5.1.1 Meetings

Committee members attended the following national meetings in NSAI as follows:

Meeting No.	Date	Minutes Reference ** optional**
1	10 th January 2019	N 059

5.1.2 National Work

The Standards Committee is represented at the National Steering Committee on Collaborative Robotics and submits a report on progress at each meeting.

5.2 International/Regional

5.2.1 Meetings

Committee members attended international meetings as follows:

Committee Name	Location	Date	No. of Attendees
ISO/TC 299/WG 3	Melbourne Australia	February 2019	1
ISO/TC 299/WG 3	Waldkirch Germany	June 2019	2
ISO/TC 299/WG 3	Mullingar Ireland	November 2019	5

5.2.2 International/Regional Work

Ireland is committed to following and inputting into the revision of the International Standards for the Safety Functionality of Industrial Robotics (ISO 10218). Since 2017 Ireland has been represented at each of the meetings held in Europe and internationally.

The focus of the work is on the requirements around the collaborative applications for robotics and humans.

5.2.3 International/Regional Standards Reviewed

ISO/DIS 10218-1; *Robotics -- Safety requirements for robot systems in an industrial environment -- Part 1: Robots*

ISO/CD3 10218-2; *Robotics -- Safety requirements for robot systems in an industrial environment -- Part 2: Robot systems and integration*

ISO/TR 23482-1:2020; *Robotics -- Application of ISO 13482 -- Part 1: Safety-related test methods*

ISO/TR 23482-2:2019; *Robotics -- Application of ISO 13482 -- Part 2: Application guide*

5.2.4 International/Regional Voting Results

The committee voted on seven of the twenty-one international votes in 2019.

5.3 Regulatory Development/Update

The European Machinery Directive is due to be revised and the Irish Committee will be monitoring this revision to ensure that provisions for robotics are included and that they serve to promote collaborative robotics.

6 Irish Publications/Reviews

6.1 Publications

National standards will not be produced by this committee. The International Standards will be published as European Standards and then adopted as Irish Standards.

6.2 Reviews

The Committee reports to the National Steering Committee on Collaborative Robotics and participates in the work of this group.

7 Work programme for 2020 onwards

ISO/DIS 10218-1 Robotics -- Safety requirements for robot systems in an industrial environment -- Part 1: Robots

ISO/CD 10218-2 revision *Robotics -- Safety requirements for robot systems in an industrial environment -- Part 2: Robot systems and integration*

ISO/DIS 22166-1; *Robotics -- Modularity for service robots -- Part 1: General requirements*

ISO/DIS 18646-3; *Robotics -- Performance criteria and related test methods for service robots -- Part 3: Manipulation*

8 Additional Information

Ireland hosted the ISO/TC 299/WG 3 meeting in Mullingar from the 11th to the 15th of November 2019. Experts on industrial robots were invited to convene in Mullingar to address the technical comments received during the public enquiry stage.

Forty-nine world's experts attended the meeting and reached consensus on over 438 technical comments, generating a Draft International Standard that will be sent to National Standards Bodies for voting.

NSAI would like to thank our research, academic and industry partners in robotics who worked together to organise this meeting that benefited both WG3, along with our national and local manufacturers interest in advanced manufacturing.