ISO TC299
https://committee.iso.org/home/tc299
ISO TC299 WORKING GROUPS (WG)

Within ISO standards, terminology is defined in the standard if it is unique or particular to that standard

- SG1: study group for TC299 organization to lessen gaps and overlaps
- WG1: terminology
- WG2: service robot, safety *(can be all ages, all abilities)*
- WG3: industrial robot, safety *(public restricted or excluded)*
- WG4: service robot, non-safety (performance, characteristics...)
- JWG5: medical – under IEC lead *(Joint WG with IEC)*
- WG6: service robot, modularity, non-safety
- WG7: management system for service robots
- WG8: new – title not released... purpose: V&V of PFL applications

There are others in this IEEE meeting who can share current status of the Service & Medical domains.
ISO 10218-1 AND -2


Part 2: Robotics — Robots and robotic devices – Safety requirements for industrial robots – Part 2: Robot systems and integration

→ Part 2: Robotics — Robotics – Safety requirements – Part 2: Industrial robot systems, applications and cells

BOTH ARE UNDER REVISION (later slide)

- ISO Technical Specification (TS) 15066:2016 – Collaborative Robots
  - Not a standard, however it does provide safety requirements for collaborative industrial robot applications and it builds on ISO 10218.
  - Contents rolled into the revisions of ISO 10218-1 and -2.
  - Will remain as a TS because it is used for more than industrial robots

TO BE REVISED AFTER PUBLICATION OF STUDY
ISO/TR 20218-1 AND -2

• Part 1: Robotics — Safety design for industrial robot systems — Part 1: End-effectors

• Robotics — Safety design for industrial robot systems — Part 2: Manual load/unload stations

• Theses TRs
  • Are NOT standards, however they provide safety guidance.
  • Companion documents to ISO 10218 Part 2.
  • Are being rolled into the revision of ISO 10218-2, with some being normative (mandatory or requirements).
ISO/TR 20218-1 AND -2

• Part 1: Robotics — Safety design for industrial robot systems — Part 1: End-effectors
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ISO 10281-1 and ISO 10218-2 (HARMONIZED)

• Currently, 2011 editions are valid and adopted (directly or indirectly) in Europe (harmonized), North America, Japan, Korea and Brazil.

• Both ISO 10218-1 and -2 are under revision.
  • Was to finish Summer 2021, but with COVID... Summer/Fall 2022.

• Goals are to make clear what is required of the:
  • Robot;
  • Robot system (includes end-effector);
  • Robot application (includes workpiece and application equipment);
  • Collaborative application(s) – roll TS 15066 into the revision documents (mostly part 2);
  • Incorporate the 2 TRs into the Part 2 revision;
  • Functional safety requirements – just what safety functions SHALL be provided...

• Plus, we have the BIG challenge of retaining harmonization status!
WHAT IS THIS “HARMONIZED” DEAL?

• Harmonized means that the standard has been evaluated and determined to meet the applicable requirements of the Machinery Directive such that conformity with the standard results in a PRESUMPTION of conformity with the Machinery Directive.

• VERY important to manufacturers and integrators.

• Lessens business risk.

• Creates a level playing field for all.

• For ISO 10218-1 and -2, the standards are USED globally!

• BUT... the Machinery Directive is being updated. What additional requirements will result?
ISO 10281-1 & ISO 10218-2 REVISIONS due to COVID, the timelines have shifted...

- **9-May-21**: Submitted Part 1: DIN 8 ISO simultaneous processing
- **13-Apr-21**: Post Part 1: 2nd DIS: compiled comments
- **16-May-21**: - 1-Sep-21: Part 1: 2nd DIS Ballot 12 wk
- **28-May-21**
- **1-Jul-21**: Post Part 1: DIS-2 HAS evaluation posted
- **1-Oct-21**: - 20-Dec-21: Part 2: DIS Ballot 12 wk
- **17-Jul-21**: Part 2: DIS Ballot 12 wk
- **19-Jul-21**: 2nd DIS: compiled comments
- **24-Nov-21**: Post Part 1 DIS-2 WGC results
- **25-Dec-21**: ISO 10281-1 deadline
- **25-Feb-22**: ISO 10218-2 deadline

**Key Dates:**
- **1-Jul-22**: ISO 10218-1 Deadline
  - 5 mo hold + 6 mo extension (extension to be decided at Plenary 2021)
- **12-Aug-22**: Part 1: DIS compiled comments
- **13-Sep-22**: VTC or Location TSG Part 1: DIS Comments

**Timeline:**
- **12-Apr-22 - 15-Jul-22**: No changes to clause numbering because of Part 2 cross referencing
- **17-Sep-22**: 16-Sep-22 WGC Meeting

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WHAT ELSE...  SG1

There was a ballot for determine re-organization needs, of which the implementation plan was drafted by SG1 (Study Group 1).

Results of balloting:

• There will be “common” safety standard for WG2 and WG3 (covering common safety requirements for all non-medical robot domains & sectors).
• Meetings of the new WG for common requirements, WG2, WG3 will be jointly held to further collaboration, cooperation...
• The new common standard will contain terminology that is common to service and industrial robot sectors.

BUT FIRST...  A plan and draft outline of the common standard needs to be approved at the June TC299 Plenary.

• Starting requires synching of WG3 and WG3 to provide experts...
A common safety standard for all non-medical robotics is agreed path forward – if the plan is approved at the June TC299 Plenary 2021.
QUESTIONS...
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