ISO TC299 WG3
Industrial robotics, Safety
ISO TC299 WORKING GROUPS (WG)

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

• WG1: terminology
• WG2: service robot, safety \textit{(can be all ages, all abilities)}
• WG3: industrial robot, safety \textit{(public restricted or excluded)}
• WG4: service robot, non-safety (performance, characteristics...)
• JWG5: medical – under IEC lead \textit{(Joint WG with IEC)}
• WG6: service robot, modularity, non-safety

There are others in this IEEE meeting who can share current status of the Service & Medical domains. I have concentrated on WG3, SG1 and within the context of SG1 – the work of WG3.
ISO 10218-1 AND -2

• Part 1: Robotics — Robots And Robotic Devices - Safety Requirements For Industrial Robots - Part 1: Robots

• Part 2: Robotics — Robots And Robotic Devices - Safety Requirements For Industrial Robots - Part 2: Robot Systems And Integration

• UNDER REVISION (later slide)

• ISO Technical Specification (TS) 15066:2016 – Collaborative Robots
  • Not a standard, however it does provides safety requirements for collaborative industrial robot applications that build on ISO 10218.
  • Companion document to ISO 10218 Part 1 & 2.
  • Contents rolled into the revisions of ISO 10218-1 and -2.
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... Maybe Summer 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!
ISO 10281-1 & ISO 10218-2 REVISIONS due to COVID, the timelines have shifted...

18-Jun-21
2021 Stockholm Plenary
15-Feb-21 - 24-Feb-21
WG3 Orlando FL
18-Oct-21 - 22-Oct-21
WG3: Seoul KR

1-Apr-22
ISO 10218-1,-2
COVID19 +/- few months
revisions completed

1-Dec-20
Part 1 HOLD ENDS
1-Dec-20
Post Part 1: 1st DIS
proposed resolutions

15-Feb-21 - 24-Feb-21
WG3 Virtual Meetings
Part 1: 1st DIS Comments

15-May-21
Post Part 1: 2nd DIS
HAS & CS Submittal

14-Jun-21 - 18-Jun-21
Plenary & WG3 Stockholm SE
Part 2 Comment completion

18-Oct-21 - 22-Oct-21
WG3 Meeting
Fastladyly in Korea
Part 1: 2nd DIS comments
Part 2: DIS Prep

1-Nov-21 - 24-Jan-22
Part 1: DIS ballot 12 wk

23-May-21 - 20-Sep-21
Part 1: DIS ballot 12 wk

15-Nov-21 - 7-Feb-22
Part 1: DIS ballot 12 wk

1-Jan-22 - 31-Aug-22
WG2, WG3 and SGI
co-located meetings
BE FLEXIBLE for mutual planning

1-Jul-22
ISO 10218-1
DEADLINE
5 mo hold + 9 mo extension

28-Feb-22
ISO 10218-2 Submittal
9 mo extension + couple months grace

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WHAT ELSE... SG1

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

• Results:
  • 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, which could have an unintended consequence of the withdrawal of some existing TC299 terminology standards (created by WG1).
    • Opportunity for aligning terminology with IEEE for any common terminology.
  • But starting requires synching of WG3 and WG3 to provide experts.

*See the next slide for agreed schedule...*
HOW TO SYNC...

(below is agreed path forward)

1-Sep-20 - 23-Apr-21
SG1 Develop scope & parameters
(e.g. C-type, harmonized, participant balance)
monthly virtual meetings

18-Jun-21
2021 Stockholm Plenary

9-Nov-20
SG1 @ NIST

25-Feb-21
SG1 @ SOG

18-Oct-21
WG3 @ Korea

12-Sep-21 - 27-Dec-23
SG1 Detail scope & parameters
monthly virtual meetings

1-Apr-22
ISO 10218-1.2
COVID19 +/- few months
revisions completed

1-Jan-24 - 31-Dec-24
SG1 Prepare draft for NWIP
Monthly virtual + 2 in person

1-Jul-24
ISO 13482
revision completed

1-Jan-24 - 30-Sep-24
SG1 Prepare draft for NWIP
for ballot

1-Mar-25
Ballot Ends

27-May-25 - 25-May-28
Prepare Standard for Common Safety Requirements

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QUESTIONS...
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