

Annual Report of an ANSI/OEOSC TAG to ISO TC172 Subcommittee Covering the Year 2015

TAG Subcommittee Number and Name: SC5 Microscopes and Endoscopes

TAG Subcommittee Leader: Stanley Schwartz 1/14/2016

ISO Meetings Held During 2015

Subcommittee meetings usually include break-out meetings of working groups and project groups. List the top-level meeting; do not list the break-out meetings.

Subcommittee, Working, or Project Group Meeting Name	Date(s)	Location
TC172 SC5 Microscopes and Endoscopes WG	September 14-17 2015	NIST Boulder, Colorado USA

ISO Meetings Scheduled for 2016

Subcommittee meetings usually include break-out meetings of working groups and project groups. List the top-level meeting; do not list the break-out meetings.

Subcommittee, Working, or Project Group Meeting Name	Date(s)	Location
TC172 SC5 Microscopes and Endoscopes WG	October 26-28 2016	Kikai Shinko Bldg. Tokyo, Japan.

Significant Accomplishments in 2015

At the Boulder Meeting:

A total of 40 experts representing 7 countries were in attendance. The following is a breakdown of delegates by country.

USA: = 6
UK: = 1
Switzerland: = 1
Sweden: = 2
Japan: = 8
Germany: = 12
China: = 10

Members from the US delegation included; Stanley Schwartz (WG3,9), Dennis Leiner (WG6), Quanzeng Wang (WG6), Azadeh Khaniechah (WG6), David Shaffer (WG6), Jurgen Zobel (WG6).

New Members from Sweden delegation (2) attended Meetings and contributed well.

The convenor for WG-9 Kimiaki Yamamoto informed the experts about his wish to retire from his convenorship. He thanked all the experts for the long time cooperation and support. The Japanese delegation will inform the ISO/TC 172/SC 5 secretariat about a potential new convenor within the next year.

The US Delegation and its supporting organizations were recognized and thanked for excellent meeting preparations and hosting the meeting in conjunction with NIST Boulder, CO. In addition a meeting function dinner was arranged and supported by Nikon and Intuitive Surgical at a local brew pub which was enjoyed by all.

**List any significant accomplishments for ANSI/OEOSC TAG/SC 5 this year (2015).
Significant Progress of Work**

Since the last meeting of SC 5, the following progress was made:

Liaisons

Liaison committee	Title	Liaison officer (their)	Liaison officer (our)
ISO/TC 172/SC 7 (Res. 265/2014)	Ophthalmic optics and instruments	Elisabeth Leitner (Sec.)	Christian Thomas; Sabine Pintaske (Sec.)
ISO/TC 121/SC 2 (Res. 266/2014)	Airways and related equipment	Robert Virag (Sec)	Sabine Pintaske (Sec.)
ISO/TC 210 (Res. 268/2014)	Quality management and corresponding general aspects for medical devices”		Felix Bitrolf; Sabine Pintaske (Sec.)
ISO/ IEC committees in liaison			
IEC/SC 62D (Res. 93/2004) (Res. 267/2014)	Electromedical equipment	Mike Schmidt (Sec.)	Sabine Pintaske (Sec.)

12 Newly published standards

- ISO 8039:2014 Microscopes - Values, tolerances and symbols for magnification 3rd edition
- ISO 15362:2014 Stereomicroscopes - Information provided to the user 2nd edition
- ISO 9345-2:2014 Microscopes - Imaging distances related to mechanical reference planes - Part 2: Infinity-corrected optical systems 2nd edition
- ISO 19012-3:2015 Microscopes - Designation of microscope objectives - Part 3: Spectral transmittance 1st edition
- ISO 8036:2015 Microscopes - Immersion liquids for light microscopy 2nd edition
- ISO 8600-2:2015 Endoscopes - Medical endoscopes and endotherapy devices - Part 2: Particular requirements for rigid bronchoscopes
- ISO 12853:2015 Microscopes - Information provided to the user
- ISO 8600-1:2015 Endoscopes -- Medical endoscopes and endotherapy devices -- Part 1: General requirements
- ISO 18339:2015 Endotherapy devices - Eyepiece cap and light guide connector
- ISO 18340:2015 Endotherapy devices - Trocar pins, trocar sleeves and endotherapy devices for use with trocar sleeves

- ISO 19055:2015 Microscopes - Minimum requirements for binocular tubes
- ISO/ PRF 19056-1:2015 Microscopes - Definition and measurement of illumination properties - Part 1: Image brightness and uniformity in bright field microscopy

3 Active work items

- ISO/CD 18221 WG 3 Microscopes - Microscopes with digital imaging displays - Information provided to the user regarding imaging performance - [DIS approved in discussion](#)
- ISO/NP 9344 Microscopes -- Graticules for eyepieces - [In discussion will move to DIS 2016-09-29](#)
- ISO/AWI 10936-1 Optics and optical instruments -- Operation microscopes -- Part 1: Requirements and test methods - [Out for vote on changes](#)

5 New Proposals in work

- ISO/NP 19056-2 Microscopes -- Definition and measurement of illumination properties -- Part 2: Illumination properties related to the color in bright field light microscopy [10.20](#) - [ISO/TC 172/SC 5/WG 9](#) -
- ISO/NP 21073 Microscope -- Confocal microscopes -- Optical data of fluorescence confocal microscopes for biological imaging [10.20](#) - [ISO/TC 172/SC 5](#) [New WG will be proposed](#)
- ISO/NP 8600-3 Endoscopes -- Medical endoscopes and endotherapy devices -- Part 3: Determination of field of view and direction of view of endoscopes with optics [10.00](#) - [ISO/TC 172/SC 5/WG 6](#) [Launch new ballot](#)
- ISO/NP 8600-5 Endoscopes -- Medical endoscopes and endotherapy devices -- Part 5: Determination of optical resolution of rigid endoscopes with optics [10.00](#) - [ISO/TC 172/SC 5/WG 6](#) [Launch new ballot](#)
- ISO/NP 8600-6 Endoscopes -- Medical endoscopes and endotherapy devices -- Part 6: Vocabulary [10.00](#) - [ISO/TC 172/SC 5/WG 6](#) [Launch new ballot](#)

4 Preliminary Work Items in discussion

- ISO/PWI 8600-8 Endoscopes -- Medical endoscopes and endotherapy devices -- Part 8: Capsule endoscopes [00.00](#) - [ISO/TC 172/SC 5/WG 6](#) -
- ISO/PWI 19644 Endoscopes -- Determination of the color difference distinction ability and the color reducing properties [00.00](#) - [ISO/TC 172/SC 5/WG 6](#) -
- ISO/PWI 19645 Endoscopes -- Determination of the luminous energy transfer efficiency [00.00](#) - [ISO/TC 172/SC 5/WG 6](#) -
- ISO/PWI 19646 Endoscopes -- Determination of the relative effect of edge photometry [00.00](#) - [ISO/TC 172/SC 5/WG 6](#) -

3 Systematic reviews for 2015

- ISO 10936-1:2000 (Ed.1) Optics and optical instruments - Operation microscopes - Part 1: Requirements and test methods - [Vote on changes see above](#)
- ISO 10937:2000 (Ed.2) Optics and optical instruments - Microscopes - Diameter of interchangeable eyepieces - [CONFIRMED](#)
- ISO 15227:2000 (Ed.1) Optics and optical instruments - Microscopes - Testing of stereomicroscopes - [CONFIRMED](#)

Significant Problems Encountered in 2015

ISO Subcommittee

No problems encountered

US TAG Subcommittee

WG 6 Endoscopes now has 6 members and represents the US TAG very well. Within WG 3 & 9; again at this meeting there was only 1 US delegation member representing microscopes. Additional experts should be recruited from other companies that may have a stake in standards other than the big 4 microscope manufacturers. Companies such as Thermo-Fisher, GE Healthcare, Bruker, Thor-Labs are appropriate. In addition academic experts are trying to be recruited with no success. Now that new work items involving confocal and LED illumination standards are proposed it is even more critical.

Summary

- The US delegation hosted the annual meeting at the NIST facilities in Boulder, CO. The facility was excellent, all participants were happy with the meeting rooms, facilities and support of NIST. We had a tour of some of the facility that was excellent and a group dinner supported by Nikon and Intuitive Surgical. Overall, this meeting was very productive, well run, very efficient and the venue was appreciated by all in attendance.
- 12 standards were published in 2015
- 3 active work items continue
- 5 proposals are in discussion
- 4 preliminary work items are being worked on
- 3 Standards were under systematic review with 2 confirmed
- There were no additional items or future work items suggested to be added

Projections for 2016

ISO Subcommittee

Revisions to ISO 9345 will take place a new name is proposed - Microscopes – Interfaces and relevant dimensions It will combine ISO 9345-1 and ISO 9345-2 and add ISO 8039 and ISO 10937 into a revised and updated standard. The Chinese delegation will nominate a project leader.

Major projects will include the 2 new Proposals for Confocal standards (German project leader) and LED Illumination standards for microscopes (Japanese project leader). Endoscopes will have 4 major proposals working including 2 lead by US project leader Dennis Leiner.

There are 5 standards up for Systematic Review in 2016

- ISO 8576:1996 Optics and optical instruments - Microscopes - Reference system of polarized light microscopy
- ISO 8255-1:2011 Microscopes - Cover glasses - Part 1: Dimensional tolerances, thickness and optical properties
- ISO 8037-1:1986 Optics and optical instruments - Microscopes - Slides - Part 1: Dimensions, optical properties and marking

- ISO 8040:2001 Optics and optical instruments - Microscopes - Dimensions of tube slide and tube slot connections
- ISO 10934-2:2007 Optics and optical instruments - Vocabulary for microscopy - Part 2: Advanced techniques in light microscopy

The convenor for WG-9 Kimiaki Yamamoto has retired; the Japanese delegation will inform the ISO/TC 172/SC 5 secretariat about a potential new convenor this year.

A new WG for Confocal Microscopy will be created. The convenor will be proposed by the German delegation before the next meeting.

The next annual meeting will take place in Tokyo, Japan October 26 – 28 2016 at JISC facilities Kikai Shinko building and will be supported by the Japan Microscope Manufacturers' Association (JMMA) and the Japan Medical-Optical Equipment Industrial Association (JMOIA)

The TAG Subcommittee

I will be making announcements in the first quarter to the US Microscopy community that new projects on Confocal and LED Illumination standards for microscopy are being worked on and request additional help from US experts from both the manufacturers' and academics communities.

Towards the end of 2016 I will be deciding (through Nikon or subsequent employers) if I remain in supporting the TAG subcommittee for SC5 or appointing a successor or replacement.