

Annual Report of the OEOSC

The Year 2017 in Review

Introduction

The Optics and Electro-Optics Standards Council (OEOSC) is a private, non-profit organization that administers and coordinates the development and maintenance of standards in the field of optics. It is accredited by the American National Standards Institute (ANSI) as the Secretariat for the Accredited Standards Committee for Optics (ASC OP), which is source of American domestic standards – known as American National Standards – in general optics. The OEOSC also serves as the ANSI-accredited Administrator for the American Technical Advisory Group (TAG) to the International Standard Organization's Technical Committee 172 (ISO TC172), Optics and Photonics and its subcommittees. The OEOSC works closely with The Vision Council regarding the TAG's involvement in ophthalmic optics.

In 2017, about 120 individuals, representing about 85 companies and professional societies, contributed thousands of volunteer hours to support American domestic standardization and American representation at the ISO under the administrative guidance of the OEOSC. They drafted, reviewed, and voted on documents with a commitment to openness, balance, and consensus as required by ANSI to create meaningful voluntary standards.

The OEOSC accomplishes its administrative tasks with two part-time staffers. Its sources of revenue are participation fees collected from members of the standards committees, short-courses presented at conferences and at companies, the sale of American National Standards that it has developed or adopted from the ISO, and the reimbursement of services in support of the TAG's ophthalmic subcommittee by The Vision Council. Expenses are dues to ANSI, minimal compensation to the staffers, and other miscellaneous items, such as conferencing and website services. The total budget for 2017 amounted to approximately \$76,000; about 45% was expended on ANSI dues.

Development of Standards

The exclusive purpose of the OEOSC is to administer and promote the development of standards in the fields of general optics, both domestically and at the ISO, and in the field of ophthalmics at the ISO. In 2017, there was activity in most of the ASC OP and TAG subcommittees.

Fundamental Optical Standards

ANSI/OEOSC OP1.002-2017 was approved as a replacement for its 2009 version. It is a domestically drafted standard for Surface Imperfections (scratches, digs, chips, etc.) on bare or coated optical surfaces. The TAG's subcommittee SC1 successfully introduced American concepts for visual inspection into the current draft for a revised ISO 10110-7, Surface Imperfections. American input has also helped to drive development of other parts of the ISO 10110 series, such as notation for the tolerancing of bulk material properties, centering, and aspheric forms.

Materials and Coatings

American modified versions of three ISO coating standards in the ISO 9211 series are ready for final balloting in ASCOP. The TAG's subcommittee SC3 submitted a proposal to start an ISO project to define infrared wavelength bands that is based on an American National Standard under development.

The SPIE's Executive Director, at the request of the OEOSC, has helped maintain funding at the National Institute of Standards and Technologies (NIST) for the ongoing refractometry of infrared materials to establish dispersion curves in the infrared from 1 to 14 microns wavelength with accuracy in the fifth decimal place. The first phase of that project – the measurement of Germanium - has taken much longer than first anticipated several years ago, but preliminary results were reported in 2017. It is expected that in 2018 the first phase will be completed along with the second phase – the measurement of ZnSe over the same range of wavelengths.

Telescopic Systems

There is no domestic standards activity in the area of telescopic systems, but the ISO subcommittee SC4 is actively working on about 4 standards. The TAG subcommittee SC4 continues to provide American input to the ISO subcommittee; however, with just 2 active members, it is looking for more involvement from the American sport optics industry.

Microscopes and Endoscopes

There is no domestic standards activity in the area of microscopes and endoscopes. The ISO Subcommittee SC5 is quite busy, and the TAG subcommittee SC5 actively represents American interests. Two new endoscope projects are under the direction of the American TAG.

Surveying Instruments

There is no domestic optical standards activity in the area of surveying instruments. The two members of the American TAG subcommittee SC6 responds to ballots from the ISO committee but does not lead any projects. American industry's low level of interest in this subcommittee has been a challenge for many years.

Ophthalmic Optics and Instruments

Domestic standards activity in the field of ophthalmics is administered by The Vision Council and the ASC Z80 committee. The OEOSC administers the TAG subcommittee SC7 which represents American interests in ophthalmics at the ISO. TAG subcommittee SC7 is the largest subcommittee in the whole TAG and is extremely active with about 50 individuals on the roster. Working groups within the subcommittee address ophthalmic instruments to measure the quality of vision and the anatomy of the eye, spectacle lenses and frames, contact lenses, intraocular lenses and surgical procedures, and data interchange.

In 2017, ISO ophthalmic standards and technical reports were published or advanced with American leadership and input in the areas of testing visual acuity, labels for contact lenses, biological and chemical compatibility of contact lenses and solutions, guidance for surgery and intraocular implants, nickel release and measurement of frames, specifications for single and multi-power spectacle lenses, and the challenge of understanding the possible role of extended exposure to deep-blue light in retinal pathologies.

Lasers and Electro-optics

The TAG subcommittee SC9, Lasers and Electro-optics, introduced to the ISO the work under development in ASC OP on the development of an ANS for laser damage terminology and measurement. A member of the American TAG was designated project leader for an ISO project that will grow out of the American domestic effort.

Augmented and Virtual Reality

The 3M Company approached the OEOSC late in 2016 with a request to start a new domestic effort in the standardization of augmented and virtual reality (AVR) hardware. Several meetings were conducted at conferences during 2017, but some of the larger companies, particularly Microsoft and Google, did not want to join the effort so early in the development of this field. Work on some aspect standardization in the field proceeds in IEC and ISO committees dedicated to human factors and displays. The OEOSC's effort has been suspended indefinitely. In the meantime, separately, the ISO technical committee TC172, the umbrella and parent committee for the Optics and Photonics subcommittees, initiated an investigation into the relevance of starting an AVR project with the possibility of creating a new subcommittee in the next several years.

Operations and Finances

Every five years, ANSI conducts an audit of accredited developers of American National Standards. The audit in 2017 of ASC OP went smoothly. Only minor issues with record keeping were exposed. Several small changes in the OP's Operating Procedures were

recommended. A modified draft will be circulated for approval by the membership in early 2018.

The retirement of the OEOSC's long-time Treasurer and bookkeeper in early 2017 caused the transfer of membership and bookkeeping responsibilities to the Executive Director. The opportunity was taken to convert the cash records of the past few years to accrual with the promise that the financial realities of the organization would be easier to measure and report. The process of conversion will continue into the first half of 2018.

Preliminary financial reports based upon accrual indicates that despite the large negative cash flows of several years ago, the OEOSC has been operating near break-even. The negative cash flows were caused by the late payment of membership invoices.

The accrual analysis exposes the adverse impact of the loss of several higher paying members, like the Optical Imaging Association society, the IEEE Photonics Society, and Brookhaven National Labs, and a number of smaller members. Sponsorships have remained steady, but the budgets for the next year or two will be impacted.

Efforts are underway to replace corporate members which have not renewed. For example, Coherent, Inc. has rejoined after a multi-year hiatus. It was recruited with the excitement generated by the laser damage work.

Training remains a significant and important source of revenue. A number of technical presentations at conferences in 2017 were very well attended and are generating more interest in standards documents and training.

Sales of standards were up in the third quarter of 2017, which is the latest quarter with sales figures, and stood at \$4,000 for the first three quarters of 2017. OEOSC's standards are sold through ANSI's website; ANSI takes a fee of 30% of the selling price.

Conclusion

The standards committees administered by the OEOSC – the ASC OP and the TAG to ISO TC172 - are challenged in certain areas, but they are basically healthy and busy. The OEOSC is challenged to replace lost membership revenue and increase training revenue over the next year.

Respectfully Submitted,
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Executive Director, OEOSC
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