National and International Standards Development –

Standardization issues for laser damage specification and testing

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The players

- Organization for International Standardization (ISO)
  - The ISO 9000 guys
  - Based in Geneva
  - Gradually establishing hegemony over all standards throughout industry
  - The part that matters to us today is ISO TC 172 SC 1
  - The US is represented by the Technical Advisory Group (TAG) to TC 172
- American National Standards Institute (ANSI)
  - Publishes American National Standards for use in the US
  - The "member body" at ISO for the US TAGs
    - Represents the United States at ISO for ALL standards
- Optics and Electro-Optics Standards Council (OEOSC)
  - Created by SPIE, OSA, and others to write optics standards in the US
  - Accredited by ANSI to handle all optics standards activities
    - The part that matters to us today is OEOSC ASC OP 1
  - Also accredited by ANSI to manage the US TAG to TC172

Organization of American optics standards activities and committees

- Task Force 1: Optical Glass
- Task Force 2: Surface Imperfections
- Task Force 3: Wavefront, Roughness
- Task Force 4: Optics Drawings
- Task Force 5: Aspheric Optics
- Task Force 6: IR Materials
- Task Force 7: Laser Standards

American Standards Committee for Optics (ASC OP)

(Manages taskforces which develop new US standards)

Technical Advisory Group for International Standards in Optics (US TAG TC 172)

(Oversees American Participation in ISO Optics Sub-committees)

ISO TC 172 SC 1: Fundamental Standards
- American Delegation
- Other delegations

ISO TC 172 SC 3: Optical Materials (includes IR)
- American Delegation
- Other delegations

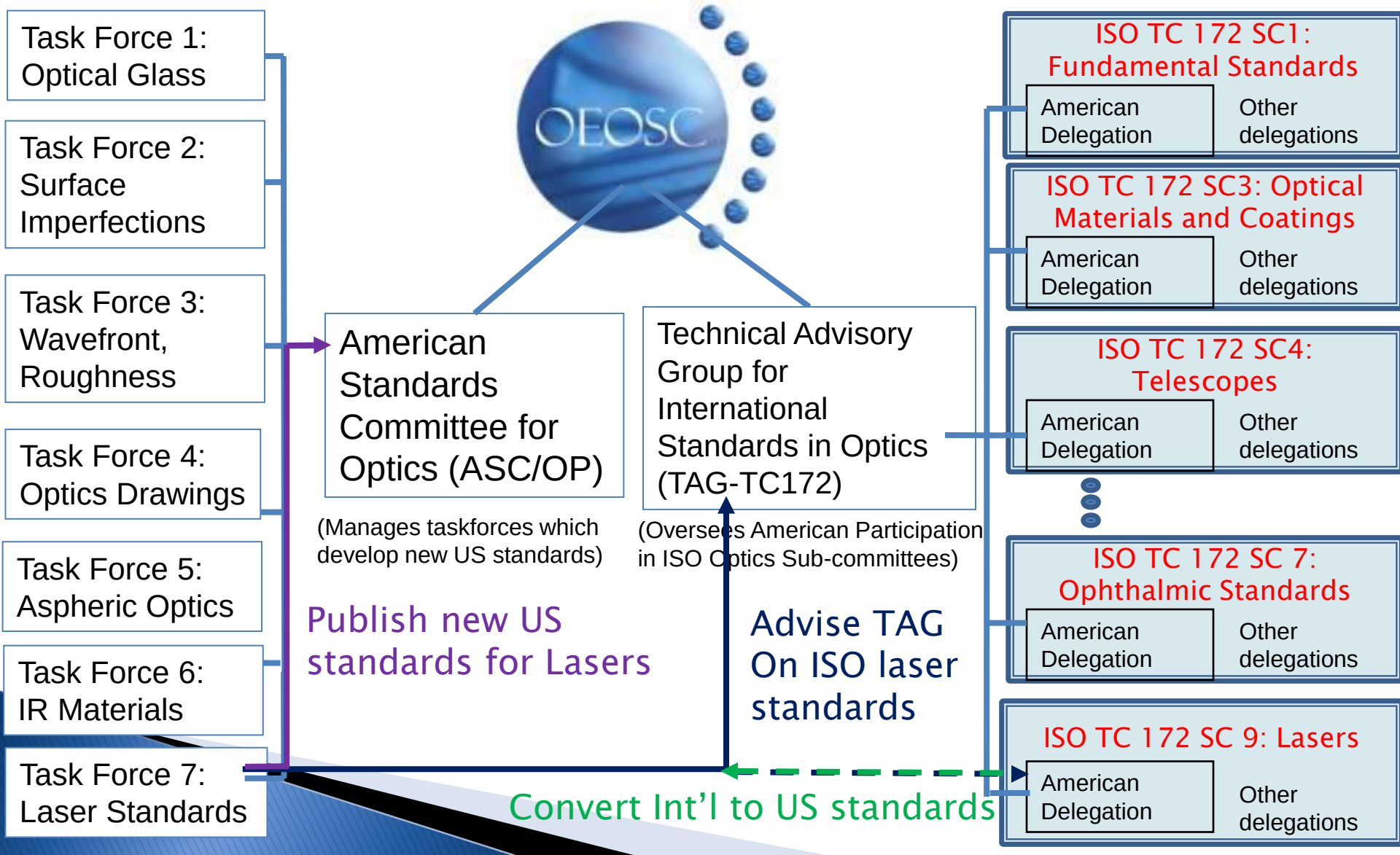
ISO TC 172 SC4: Telescopes
- American Delegation
- Other delegations

ISO TC 172 SC7: Ophthalmic Standards
- American Delegation
- Other delegations

ISO TC 172 SC9: Lasers
- American Delegation
- Other delegations

At Photonics West 2014, ASC OP voted to create TF7 Laser Standards

Task Force 7 will have two main roles



Process for developing a new ANSI standard

- Task Force recommends a new standard project
  - Title
  - Scope
  - Project Leader (must be a representative of a voting member)
- ASC OP votes* to begin project (PINS filed with ANSI)
- Project Leader offers proposed draft
- Task Force iterates standard until it is acceptable
  - Review at meeting
  - Circulate for comments
  - Edit final draft in committee
- Task Force votes* to advance standard to OP for vote
- ASC OP votes* to endorse standard (BSR8)
- ANSI votes to approve standard (BSR9)
- Standard is published by OEOSC

Typically three to five years

* Majority rule, with review and reconciliation of comments and dissent. Voting members are companies, corporations, institutions and organizations in good standing (pay participation fee). New members are ratified at ASC/OP annual meeting to assure balance.

Process for developing a new ISO standard

- Member Body (National Committee) writes a New Work Item Proposal (NWIP) to a SC/WG
  - Usually includes a draft standard
- Working Group votes* on the NWIP
  - Approval of NWIP
  - Willing to provide experts and/or project leader

Typically three to five years

- Project Leader offers up a working draft (WD)
- Subcommittee (SC) votes* to advance to Committee Draft (CD)
- Working Group iterates CD as necessary
  - Letter ballots and written comments only
  - Comments are addressed in writing by the Project Leader
- Subcommittee votes* to advance to Draft International Standard (DIS)
- Subcommittee votes* to advance to Final Draft International Standard (FDIS)
- ISO secretariat conducts final editorial review, and publishes the standard (ISO)

* Must be supermajority to pass. One country, one vote. Comments can be accepted or rejected by the project leader. Resolution of dissent not required.

Current Voting members of ASC OP

4D Technology
APOMA
Brookhaven Nat'l Lab
Cymer/ASML America
Corning Tropel
Davidson Optronics
E. R. Precision Optical
Edmund Optics
Exotic Electro-Optics
Fairfield Crystals
FLIR Precision Optics
Gage-Line Technology, Inc.
Harold Johnson Optical Lab.
IEEE Photonics Society
JDSU
LaCroix Optical Co.
Lattice Materials, LLC
Lawrence Berkeley Nat'l Lab
Leidos
Lighthouse Imaging LLC
Lockheed Martin (Orlando)
M3 Measurement Solutions, Inc.
Nikon Research Corp.
NIST
Northrop Grumman Electronic Syst.
Ophir-Photon, LLC
Ophir-Sphericon, LLC
Optical Society of America
Optical Imaging Association
Optical Perspectives LLC
Optimax Systems, Inc.
Opto-Alignment Technology, Inc.
QED Technologies
R. A. Smythe, LLC
Ray Williamson Consulting
Reichert, Inc.
Research Electro-Optics, Inc.
Riyo, LLC
Rochester Precision Optics LLC
Savvy Optics Corp.
SPIE
Triptar Lens Co, Inc.
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Status of Existing laser damage related standards…

Standard	Relevance	Comments