HEAD OF DELEGATION (HoD) REPORT

Please return this report within one month of the completion of the international meeting and submit it to the appropriate ANSI Department as follows:

<table>
<thead>
<tr>
<th>ISO</th>
<th>USNC</th>
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<tbody>
<tr>
<td><a href="mailto:ISOT@ansi.org">ISOT@ansi.org</a></td>
<td><a href="mailto:USNC@ansi.org">USNC@ansi.org</a></td>
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HoD reports can be used for a variety of purposes. For example:

- To report results of a TC/SC meeting to the related TAG
- To publicize the work of the TC/SC to the related US constituency via ANSI On-line, USNC News and Notes, or other media
- To suggest areas for possible development of featured articles
- To address specific challenges and concerns that the HoD may bring to the attention of related ANSI and/or USNC/IEC management

PLEASE REMEMBER: Your HoD report is NOT filed as a confidential, password protected document and, therefore, may have broad, unintended distribution. Keep this in mind when preparing the report and, if appropriate, use a more secure form of correspondence to call attention to any sensitive issues.

Completed by:

<table>
<thead>
<tr>
<th>Head of Delegation: (Please print)</th>
<th>William R Finley</th>
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<tbody>
<tr>
<td>Telephone/Telefax:</td>
<td>513-841-3390</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:Bill.finley@siemens.com">Bill.finley@siemens.com</a></td>
</tr>
<tr>
<td>Date:</td>
<td>September 15th &amp; 16th, 2014</td>
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Meeting of TC 2 Plenary In Helsinki Finland September 2014
(Designation/Title)
Date(s) September 28, 2014
Location Helsinki Finland
1. **MEETING ATTENDANCE**

   Please indicate, if available, both the number of delegates and the countries represented at the Meeting:

   X Meeting attendance roster and meeting resolutions attached, if available

   Please comment on significant or unusual attendance issues (e.g., new member bodies, regular members not in attendance, new Chairman or Secretariat, non-accredited U.S. persons, etc.).

   **Australia was not present.**

2. **MEETING OBSERVATIONS**

   **2. Overall, how well did the U.S. meet its objectives on policy or technical matters?**

   X Very Successful -- U.S. positions were accepted in whole
   __ Successful -- Compromises were reached which are acceptable to the U.S.
   __ Not Successful -- U.S. positions were not accepted

3. **Please comment on any issues of significance which might have an impact upon materially affected or interested U.S. parties.**

   Need to limit the number of country members to 3 in any one WG. Will need to harmonize performance standards between NEMA, IEEE and IEC. A need to harmonize testing standards between IEEE & IEC. 60034-27 should be observed to ensure it is in harmony with IEEE 43. Details given in Minutes.

4. **Was there any discussion for which the United States was unprepared? (e.g., late document distribution, addition of new items, etc.)**

   No

5. **Did the U.S. extend an offer to assume any new TC/SC Secretariat or management positions?**

   __ Yes X No
   (If yes, please indicate which position and provide Officer contact information.)

6. **Did the U.S. extend an offer to host any future TC/SC meetings?**

   X Yes __ No
   If yes, please identify:
   TC 2 Plenary in Washington DC May 18th & 19th 2016
7. Were any new issues raised which require, or might involve, coordination with other U.S. bodies? (Include coordination items with other U.S. TAGs, ANSI policy-level committees (AIF, AIC, the USNC TMC and/or Council, etc.)

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If yes, please identify:
Has not been an issue for the US but they request we limit the membership of experts in any one WG to a total of 3, excluding Convenor & Liaisons.

8. Did the U.S. put forth/agree to put forth any New Work Items?

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If yes, please identify:
A joint working group to develop an IEC version of IEEE 841, TC 2 does not wish to develop Industry related standards but would a Liaison and IEC members to be involved.

9. Was there any evidence of irregular voting by participating countries?

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If yes, please identify any significant issues or concerns:

10. Are work items in the TC or SC being affected by related work in regional standards bodies (e.g., CEN, CENELEC, ETSI, PASC, NAFTA, COPANT, etc.)?

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If yes, please explain:
CENELEC developed EN 50598 covering Energy Efficiency on extended products, which will be driven to be an IEC standard through a UAP process per the Dresden agreement.

11. Were any new issues raised which require, or might involve, coordination with emerging market countries?

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If yes, please explain:

12. Were any issues raised which relate to or impact existing U.S. regulatory matters?

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If yes, please explain:
Extended efficiencies from EN 50598 will be included in IEC 61800-9 per WG 18 and this will need to be coordinated with the DOE.

13. Please identify any IMMEDIATE U.S. TAG actions which will be required as a result of this international meeting.

N/A

14. Please identify specific decisions which the U.S. delegation believes to be noteworthy for publication, publicity and/or development of a future article. If there are any, would you be willing to help develop an article for publication?
<table>
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<td>15.</td>
<td>What might be done to further promote the ANSI Federation’s goal of “global standards that reflect U.S. interests?” (Consider such issues as how might the U.S. further promote acceptance of related American National Standards in international and, where applicable, regional fora?)</td>
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<td></td>
<td>US based standards requirement can be included in IEC standards by expert membership in Working Groups and by becoming Conveners.</td>
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<td>16.</td>
<td>Has this report been provided to your TAG Administrator for US TAG distribution?</td>
<td>X</td>
<td>Yes</td>
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<td>17.</td>
<td>Other Comments</td>
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September 2012
Meeting Attendance Roster:

**Chairman**  Prof. Dr. Bernd Ponick (Germany)

**Secretary**  Nick Bradfield (United Kingdom)

**Assistant Secretary**  Dr. Eugene Popov (Russian Federation)

<table>
<thead>
<tr>
<th>Country</th>
<th>Delegate</th>
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<tbody>
<tr>
<td>China</td>
<td>Xiuying Li</td>
</tr>
<tr>
<td></td>
<td>Yutian Sun</td>
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<tr>
<td></td>
<td>Weihua Chen*</td>
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<td>Yunshan Wu</td>
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<td>Jinwu Ye</td>
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<td>Weican Yan</td>
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<tr>
<td>Czech Republic</td>
<td>Milos Penicka*</td>
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<tr>
<td>Denmark</td>
<td>Finn Jensen*</td>
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<tr>
<td>Finland</td>
<td>Jari Pekola*</td>
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<td></td>
<td>Jukka Hannuksela</td>
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<td></td>
<td>Janne Roivainen</td>
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<tr>
<td>France</td>
<td>Céline Joannan</td>
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<td></td>
<td>Eric Vassent*</td>
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<tr>
<td>Germany</td>
<td>Axel Möhle</td>
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<td></td>
<td>Martin Doppelbauer*</td>
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<td></td>
<td>Michael Könen</td>
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<tr>
<td>Italy</td>
<td>Marcello Marduzza*</td>
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<td>Japan</td>
<td>Noboru Morita</td>
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<td>Akitomo Semba</td>
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<td>Koji Hirota</td>
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<td>Kinichi Sugimoto</td>
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<td>Yuji Kurata</td>
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<tr>
<td>Russian Federation</td>
<td>Alexander Krug*</td>
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<td>South Africa</td>
<td>John Mtombeni*</td>
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<td>Spain</td>
<td>César Muñiz</td>
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<td></td>
<td>Joan Soler*</td>
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<td>Sweden</td>
<td>Leif Bergman*</td>
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<td>Switzerland</td>
<td>Conrad Brunner*</td>
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<tr>
<td>USA</td>
<td>Bill Finley*</td>
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<tr>
<td>IEC/CO</td>
<td>Charles Jacquemart</td>
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<tr>
<td>IEC/SC 22G</td>
<td>Martial Patra</td>
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<tr>
<td>Liaison (Germany)</td>
<td>Peter Zwanziger</td>
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*Denotes Head of Delegation
AGENDA

TECHNICAL COMMITTEE 2: ROTATING MACHINERY
MINUTES FOR THE MEETING HELD IN HELSINKI ON WEDNESDAY 17th AND THURSDAY 18th SEPTEMBER 2014

1 Opening of the meeting (9.00 am)
It was noted that Dr. Martin Kaufhold was awarded a 1906 award in 2013 and Prof. Dr. Martin Doppelbauer in 2014.

2 Approval of the agenda 2/1755A/DA
(this document)
Agenda was approved with corrections made

3 To note the minutes of the meeting held in Kyoto, Japan on 30th May 2012.
2/1681/RM
Noted

4 Matters arising from the minutes not covered by the agenda
None identified

5 Information from IEC Central Office Presentation by Mr. Jacquemart:
There will be a stronger position on the maximum number of experts per WG or MT from any one country. The recommended limit will be 3.

Discussion on comment periods on Committee Drafts

Clause 2.5.2. of Part 1 of the ISO/IEC directives reads:
…. A period of 2, 3 or 4 months as agreed by the technical committee or subcommittee shall be available for national bodies to comment.”
Advice from IEC/CO is that TC 2 should consider making a specific decision allowing the Chairman and Secretary to choose a 2 month CD circulation period, after consultation with the project leader or WG Convenor.

Decision 1: TC agreed to request national committees to restrict the number of members experts appointed to 3 where ever possible.

Decision 3: TC agreed that for the 1st CD the comment period should be 3 months, but subsequent CD’s can be 2, 3, or 4 months at digression of Convenor in consultation with the chairman and secretary.

6 Convener’s reports from TC 2 Working groups
WG 12 - Rating, performance and general support (Convenor: Prof. Dr. Bernd Ponick)
IEC 60034-1: Ed 13 Part 1: Rating and performance
2/1736/CD; 2/1751/CC; 2/1755A/DA
Proposal for ‘more logical’ limits of temperature rise in IEC 60034-1 IEC 60034-12: Part 12:
Starting performance of single-speed three-phase cage induction motors

IEC 60034-20-1: Control motors - Stepping motors (at PWI stage)

Dr. Ponick provided the report. Activity on IEC 60034-20-1 will be covered in WG 12.
6.2 WG 28 – Performance as determined by tests (Convenor: Dr Axel Moehle)
IEC 60034-19 Ed. 2.0: Part 19: Specific test methods for d.c. machines on conventional and rectifier-fed supplies

Dr. Moehle provided the report:
Everyone needs to be aware that 60034-2-3 could become an IS in next revision so review of the processes critical by all members

6.3 WG 31 Efficiency classes (Convenor: Dr. Martin Doppelbauer)
2/1741/CD
2/1753/CC

Dr. Doppelbauer reported:
IEC 60034-30-1 establishes efficiency levels for all machines that will operate on Grid.
IEC 60034-30-2 establishes efficiency levels for all machines that cannot run on grid. We can expect a CD to be generated by June 2015 and then a second CD in 2016 & CDV in 2017.

6.4 WG 32 Measurement of stator end winding vibration at form wound windings (Convenor Dr. H. Kuemmlee)
IEC/TS 60034-32 Ed. 1.0 Measurement of stator end winding vibration at form wound windings: 2/1638/NP 2/1653/RVN

Written report sent in from Dr. Kuemmlee.
WG has 24 members. There was much interest followed by strong discussions on whether levels need to be set for all machines. Draft expected within WG in 2014. CD expected to come out in November 2014. CDV expected after 2016.


New WG NP passed. Work will now begin.

6.6 MT 2 - Noise emission (Convenor: Mr. Roivainen)

No change required to noise standard IEC 60034-9 as a result of PM (Permanent Magnet) machines. New stability date will be established.

6.7 MT 3 - Terminal markings (Convenor: Mr. William Finley)

Convenor Mr. Finley gave a report:
IEC 60034-8 revision was published this year to include PM machines. New stability date will be established.

6.8 MT 5 - Mechanical Ix Configurations (Convenor: Mr. Erik Zvaigzne)
IEC 60072: Start of revision and incorporation of brushless permanent magnet motors in other standards. 2/1596A/INF 2/1641/DC

We did not receive formal report so there was no discussion.
6.9 MT 6 - Turbo generators (Convenor: Dr. Walter Söhner)
IEC 60034-3: Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines 2/1683/DC 2/1690/INF:

Did not receive formal report on IEC 60034-3; MT6, but they are working on part 7 and will be published within 24 months as a CDV. MT is looking for more experts.

6.10 MT 7 – Vibration (Convenor: Mr. Roivainen) 3 2/1755A/DA
IEC 60034-14: Vibration. 2/1675/DC 2/1721/INF

Result of DC determined that no change is required to vibration standard IEC 60034-14 as a result of PM (Permanent Magnet) machines. New stability date will be established.

6.11 MT 9 - Converter fed AC motors (Convenor: Mr. Bill Finley)
IEC/TS 60034-25: AC Motors when used in power drive systems – Application guide 2/1731/DTS 2/1750/RVC

Convenor Mr. Bill Finley Reported:
The work of 60034-25 is complete and will be published as TS in next few weeks. MT recommended that IVIC levels be included on Nameplate and requirement be documented in IEC 60034-1. 60034-17 will be withdrawn.
New stability date will be set.

6.12a) MT 10 - Qualification, tests and diagnostics of winding insulation (Convenor: Dr. Martin Kaufhold) (Incorporating WG 29 see 2/1722A/INF) IEC 60034-27-3
TS Ed.1: Part 27-3: Dielectric dissipation factor measurement on stator winding insulation of rotating electrical machines: 2/1705/CDV 2/17--/RVC*

IEC 60034-18-42 Ed. 1.0 Rotating electrical machines - Part 18-42: Partial discharge resistant electrical insulation systems (Type II) used in rotating electrical machines fed from voltage converters - Qualification and optional screening tests: 2/1746A/CC 2/1757A/CD:

Written report submitted.

Mr. Pekola stated Concerns with how manufacturers establish the reference insulation system. Each manufacturer will achieve different results since they each have a different baseline:

A new work proposal (NP) on “PD measurement at impulse voltage on rotating electrical machines” 60034-27-5 will be established.

There is a concern that IEEE 43 and 60034-27-4 may not be identical. Question was asked why we need 60034-27-4 when we already use IEEE 43. Question was not resolved.

6.13 MT 11: RIC engine driven generators (Convenor: Mr. Bob Wheadon)

We have been unable to contact Mr. Bob Wheadon and to so we need to consider appointing a replacement Convenor.

There is no report at this time.
6.14 MT 12 Excitation systems for synchronous machines (revision of the IEC 60034-16 series) (Convenor: Dr. E Popov)

Dr. Popov gave report:
TC 2 agreed that the Chairman would explore if IEC 60034-16-2 and IEC 60034-16-3 should be revised in cooperation with IEEE incorporating existing requirements in IEEE standards (possibly dual logo)

Dr. Popov gave report

6.15 MT 13 Refurbishment (Convenor: Mr. T Marks)
IEC 60034-23: Specification for the refurbishing of rotating electrical machines 2/1645/CD 2/1684/CC

Mr. Marks submitted report:
Second CD is expected early next year. A CDV will be expected 2016

6.16 MT 14 Brushes and brush-holders for electrical machinery (Mrs. Céline Joannan) IEC 60356 ED 1.0 (1971) Dimensions for commutators and slip-rings: 2/1754/DC

Mrs. Joannan gave report:
They have 8 standards to revise, and have 8 experts on the committee. 60276 is the 1st to be releases. Will have draft CD in October. Plan is to have CDV next year.

7 Liaisons 2/1760/INF

7.1 IEC/SC 121A (previously IEC SC 17B) - Low-voltage switchgear and Control gear (Liaison Mr. Karl Hiereth)

No report:

7.2 IEC/SC 22G - Semiconductor power converters for adjustable speed electric drive systems (Liaison: Dr. Peter Zwanziger) 4 2/1755A/DA

There was extensive discussion on EN 50598 & 61800-9. NP 277 passed but need 5 experts and only 3 were nominated. It is anticipated that we will get the experts and work will progress. Meeting will follow in the next week in Milan.

Decision: TC2 supported a joint working group between TC 2 and SC 22G in order to develop NP 277 taking into account the work of EN 50598. Could also be done by a close working liaison between the SC 22G WG and reporting to TC 2 WG 28 & WG 31.

7.3 IEC/TC 25/WG4: Letter Symbols, Part 4 Electrical Machines (Mr. Robert G Bartheld)

Mr. Finley verified that Mr. Bartheld no longer wishes to be Liaison and Mr. Bartheld reported that there is no need to have a Liaison.

7.4 IEC/TC 31 Equipment for explosive atmospheres (Liaison Mr. Lhenry)

Mr. Lhenry is no longer active here so we need new Liaison. We are looking for a volunteer.

7.5 IEC/TC 65: Industrial Process Measurement, Control and Automation
Dr. Doppelbauer reported: No action required.

7.6 IEC/TC 112 Evaluation and qualification of electrical insulating materials and systems (Liaison: Dr. Jeremy Wheeler)

Written report presented. We need a new liaison.

7.7 ISO/TC 70 - Internal Combustion Engines (Liaison: Mr. Bob Wheadon)

It was noted that it has been impossible to contact Mr. Bob Wheadon therefore we need to appoint a replacement liaison.

7.8 ISO TC 108/SC 2/WG 1- Mechanical vibration and shock (Liaison: Mr. Robert G Bartheld and Mr. Bill Finley)

Mr. Finley & Bartheld submitted a report. Standard in process that establishes measurement procedures & locations but so far there has been no changes that affect TC 2.

7.9 ISO/TC 108/SC 5/WG 10 Condition monitoring and diagnostics of electrical equipment (Liaison: Mr. G Bartheld).

Reported that there is no need for a future liaison.

8 Strategic planning
8.1 Program of work as recorded on the IEC database
2/1761/PW

8.2 To review TC 2 stability dates as recorded under “Publications issued” on the TC 2 website.

All stability dates revised or confirmed.

8.3 To update the Strategic Business Plan (SBP).
SMB/4873/R

9 Any other business

None required

10 Date and place of next meeting

To be held on May 18th & 19th, 2016 in Washington DC.

11 Close of meeting