MINUTES OF THE
COUNCIL MEETING
(January 29, 2018)

Subject to the approval of the ION Council, the following minutes are submitted. The Council meeting was called to order on January 29, 2018 at the Hyatt Regency Reston Hotel, Reston, Virginia at 6:00 p.m. Those present were:

VOTING COUNCIL MEMBERS:

<table>
<thead>
<tr>
<th>Name</th>
<th>Office Held</th>
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<tbody>
<tr>
<td>John Raquet</td>
<td>President</td>
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<tr>
<td>Jade Morton</td>
<td>Executive Vice President</td>
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<tr>
<td>Frank van Graas</td>
<td>Treasurer, Past President</td>
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<tr>
<td>Anthea Coster</td>
<td>Eastern Vice President</td>
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<tr>
<td>Gary McGraw</td>
<td>Western Vice President</td>
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<tr>
<td>Elliott Kaplan</td>
<td>Military Division Chair</td>
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<tr>
<td>Dorota Grejner-Brzezinska</td>
<td>Immediate Past President</td>
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<tr>
<td>Francine Vannicola</td>
<td>Eastern Member-at-Large</td>
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<tr>
<td>Paul Benshoof</td>
<td>Western Member-at-Large</td>
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<tr>
<td>Sunil Bisnath</td>
<td>Technical Representative</td>
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<tr>
<td>Mathieu Joerger</td>
<td>Technical Representative</td>
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<tr>
<td>Olivier Julien</td>
<td>Technical Representative</td>
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<tr>
<td>Andrey Soloviev</td>
<td>Technical Representative</td>
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<tr>
<td>Terry Moore</td>
<td>Technical Representative</td>
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<tr>
<td>John Nielson</td>
<td>Membership Chair</td>
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<tr>
<td>Sherman Lo</td>
<td>Meetings Chair</td>
</tr>
<tr>
<td>Michael Meurer</td>
<td>Awards Chair</td>
</tr>
<tr>
<td>Todd Walter</td>
<td>No. Cal. Chair/Past President</td>
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<tr>
<td>Chris Hegarty</td>
<td>Past President</td>
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<tr>
<td>Larry Hothem</td>
<td>Past President</td>
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<tr>
<td>Mikel Miller</td>
<td>Past President</td>
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<td>Karen Van Dyke</td>
<td>Past President</td>
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NON-VOTING PARTICIPANTS:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position Held</th>
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<tbody>
<tr>
<td>Lisa Beaty</td>
<td>Executive Director</td>
</tr>
<tr>
<td>Ryan Dupuis</td>
<td>PTTI General Chair</td>
</tr>
<tr>
<td>Sanjeev Gunawardena</td>
<td>SDR GNSS Metadata Standard Chair</td>
</tr>
<tr>
<td>Jim Doherty</td>
<td>Past President</td>
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</tbody>
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It was determined that a quorum was achieved.

AGENDA

See Attached File: Agenda Council January 2018

Approve September 25, 2017 Council Meeting Minutes: J. Raquet
Motion: Council approves the September 25, 2017 Council Meeting Minutes as circulated. Motion made by Terry Moore, seconded by Sunil Bisnath and passed by the Council.

President’s Report: J. Raquet

See Attached File: Presidents Report 1-29-18

John Raquet, ION President, advised Council that the ION Executive Committee had met on September 26, 2017 at ION GNSS+ and approved the ION’s FY 2016-’17 Audited Financial Statements, Governance Communication and Management Letters. Additionally, Council was advised that at the same time the Executive Committee had approved $348K be transferred from the ION’s operating account to the ION’s Intermediate Fund in the ION Reserve Fund in six equal installments over the next six months (October 2017-March 2018). It was reported more information would be received during the Treasurer’s Report later in this meeting.

Council was advised that during the September 2017 Executive Committee the Committee had accepted the National Office’s recommendation to adopt Division and Section branding under the ION’s national logo design and approved Division and Section logos to replace all previous logos. It was noted that the Executive Committee approved the continued use of the PLANS and JNC conference logos, and the Women in PNT logo, used in conjunction with the use of the ION logo in print/electronic promotion. It is preferred that conference logos not stand alone; exceptions may be made for giveaways or promotional items such as committee polo shirts etc. (See September 26, 2017 Executive Committee Minutes for details or the attached President’s Report.)

There was formal follow-up on a January 2017 Council action item for Council to consider whether ION should institute Best Paper/Presentation awards at the ION’s International Technical Meeting (ITM). The formal recommendation was made that the ION not institute Best Paper/Presentation Awards at ITM at this time as: 1) there was not adequate competition to justify a “best” award at this time; and 2) awarding a best paper award at ITM would degrade the value/status of a “best” award at ION GNSS+ where the competition for the award is substantially greater. Discussion followed. Sherman Lo, Meetings Chair, suggested Council look to creative new ideas to recognize excellent papers at ITM on conference level verses session level, thus recognizing the best papers but making the awards competitive. Dr. Lo reported that he would continue to think about broad categories of awards for ITM and a practical way that this could be implemented and bring to Council at a future date when ready.

Dr. Raquet formally advised Council that Dr. Olivier Julien, ENAC, France, had accepted the invitation to serve as ION’s ITM 2019 Program Chair.

Motion: Council ratify John Raquet’s appointment of Dr. Olivier Julien to serve as ION’s ITM 2019 Program Chair. Motion made by John Raquet, seconded by Dorota Grejner-Brzezinska by and passed by the Council.

Executive VP Report: J. Morton

Dr. Jade Morton, Executive VP, reported she had participated this past year in activities of the
Executive Committee, on the Women in PNT steering committee, and that she continued to interface with the organizers of the Chinese Satellite Navigation Conference (CSNC). She reported that she would be working with CSNC organizers this next year to co-sponsor/host an ION-sponsored panel at the CSNC meeting in Harbin, China in May 2018.

**Eastern Region VP Report: A. Coster**

Dr. Anthea Coster, Eastern VP, applauded the activity and programs of the Dayton Section and provided information on recent Dayton and New England Section activities. She also reported the North Star Section was in the process of executing their eighth annual snowplow competition that weekend.

Dr. Coster suggested that if enough Section Chairs attended ION GNSS+ this September, it may be helpful for all of them to meet together to exchange ideas.

**Western Region VP Report: G. McGraw**

Dr. Gary McGraw, Western VP, reported that he had accepted an action item from Steve Rounds (Southern California Section Chair) to provide a list of authors from the ION GNSS+ meeting who were local to his section as a list of potential section speakers. Dr. McGraw noted that the ION National Office had been able to provide this list to Rounds. McGraw would follow-up with Rounds to find out if this had been useful.

**Annual Awards Committee Report: M. Meurer**

See Attached Report: *Annual Awards Report 2017*

Michael Meurer, chair of the 2017 Annual Awards Committee, reported that the 2017 Awards Committee was comprised of: Dr. Michael Meurer (Chair), Dr. Chris Hegarty, Dr. Richard Langley, Dr. Christophe Macabiau, Mr. Doug Taggart, Dr. Gary McGraw and Dr. Jade Morton.

The committee selected the following as their recommendations of the proposed recipients of The Institute of Navigation’s Annual Awards.

<table>
<thead>
<tr>
<th>Award Type</th>
<th>Recipient</th>
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<tbody>
<tr>
<td>Early Achievement</td>
<td>Dr. Zheng Yao</td>
</tr>
<tr>
<td>Superior Achievement</td>
<td>Captain Gregory DuBose</td>
</tr>
<tr>
<td>P.V.H. Weems:</td>
<td>Dr. Allison Kealy</td>
</tr>
<tr>
<td>Tycho Brahe:</td>
<td>Not granted this year due to lack of appropriate nominations</td>
</tr>
<tr>
<td>Norman P. Hays:</td>
<td>Mr. David Turner</td>
</tr>
<tr>
<td>Thomas L. Thurlow:</td>
<td>Dr. Yang Gao</td>
</tr>
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Burka Award (selected by the editor and associated editors of *NAVIGATION*):
It was reported that the Annual Award Selection Committee’s recommendations were approved by the ION Executive Committee, by e-mail vote (November 2017) and the Annual Award Selection Committee requested Council ratify the 2017 ION Annual Award selections with the following motion:

Motion: Council ratifies the recommendation of the Annual Awards Committee of the proposed recipients of the 2017 Annual Awards, as outlined above. Motion made by Michael Meurer, seconded by Gary McGraw, and passed by the Council.

It was noted that the members of the 2017 Annual Awards Committee were approved to serve a second year during the September 26, 2017 Council.

Motion: The following are approved to serve as members of the 2018 Annual Awards Committee: Dr. Michael Meurer (chair), Dr. Chris Hegarty, Dr. Richard Langley, Dr. Christophe Macabiau, Dr. Jade Morton, Dr. Gary McGraw and Mr. Doug Taggart. Approved September 26, 2017 Council Meeting.

Dr. Meurer asked Council to clarify the Tycho Brahe Award regulations. He noted that according to section 6.4 of the Award Awards Policy (approved Sept. 2015):

“The purpose of this award is to recognize an individual who has made an outstanding contribution to the science of space navigation [...] and whose actions have benefited civilization in any form. Contributions may include scientific advances, novel instrument development, experiments, and applications to deep space, interplanetary and near-Earth spacecraft navigation.”

It was reported that during the consultations of the awards selection committee, the committee’s members expressed different interpretations of this regulation. One interpretation was that only nominees who have made outstanding contributions specifically to the improvement in spacecraft navigation would be eligible. Other interpretations were broader and considered nominees eligible made outstanding contributions to general improvements in navigation, which as a special case, were used in the field of spacecraft navigation. A third interpretation is that outstanding work or research on space environment, e.g. ionosphere, is also a contribution to the science of space navigation addressing scientific advances and, therefore, should be considered eligible.

Dr. Meurer reported that the majority of committee members followed the first mentioned interpretation and proposed that clarify the formulation in the awards policies and procedures as follows (as quoted from section 6.4A of Annual Award Policy with the committee’s proposed changes in red):

The purpose of this award is to recognize an individual who has made an outstanding contribution specifically to the science of spacecraft navigation, guidance and control and whose actions have benefited civilization in any form. Contributions may include scientific advances, novel instrument development, experiments, and applications to deep space, interplanetary and near-Earth spacecraft navigation.
Proposed Motion: Council approves the clarification of the Tycho Brahe Award regulations by approving the following change to Section 6.4A (Purpose of the Tycho Brahe Award) of the Annual Award Policy as follows:

6.4 TYCHO BRAHE Award
A. The purpose of this award is to recognize an individual who has made an outstanding contribution specifically to the science of spacecraft navigation, guidance and control and whose actions have benefited civilization in any form. Contributions may include scientific advances, novel instrument development, experiments, and applications to deep space, interplanetary and near-Earth spacecraft navigation.

There was considerable discussion, including the original intent of the award’s founder, past president Col. Len Sugerman. It was agreed by past presidents present at the meeting that the original intent of the award was for it to be awarded for spacecraft navigation.

Council debated if the ION needed to keep the intent of this award narrowly defined. It was debated whether the award criteria should be:
- narrowly defined to spacecraft navigation
- be broadened to include space sciences affecting space navigation, or
- should it be broadly interpreted to anything related to GNSS space sciences.

The question was discussed as to whether or not Council was comfortable not awarding The Tycho Brahe as often if the award’s nomination criteria was left as narrow. Dr. Todd Walter pointed out that if nominations received for this award have been less competitive it is because there have been fewer nominations due to the narrow definition, but this in no way has diminished the standards for those to whom the award was bequeathed.

Dr. John Raquet suggested the sentiments expressed suggested that nominations needed to be limited to technical achievements that could affect spacecraft navigation. All agreed they did not want the Tycho to become a general GNSS award.

Dr. Dorota Brzezinska suggested the motion be changed: “... specifically to the science related to the science related to spacecraft navigation.” It was noted this language would better ensure awardees would more likely be people would would embrace ION and not from outside communities.

Chris Hegarty proposed ION try harder to solicit nominations for people who meet the specific criteria as Sugerman designed before Council decided to broaden the definition.

Motion: Council approves the clarification of the Tycho Brahe Award regulations by approving the following change to Section 6.4A (Purpose of the Tycho Brahe Award) of the Annual Award Policy as follows:

6.4 TYCHO BRAHE Award
A. The purpose of this award is to recognize an individual who has made an outstanding contribution specifically to the science of spacecraft navigation, guidance and control...
and whose actions have benefited civilization in any form. Contributions may include scientific advances, novel instrument development, experiments, and applications to deep space, interplanetary and near-Earth spacecraft navigation.

Motion made by Michael Meurer, seconded by and passed by the Council in a vote of 14 in favor and 4 opposed.

Fellow Selection Committee Report: J. Betz

See Attached Report: Fellow Committee Report 2018

Dr. John Betz, Fellow Selection Chair, was unable to attend. It was reported that the 2018 Fellows Selection Committee consisted of the following ION Fellows: Dr. John Betz (Chair), Dr. Anthea Coster, Dr. Pratap Misra, Tom Stansell, Dr. Peter Teunissen and Karen Van Dyke.

It was reported that the 2018 Fellow Selection Committee had endorsed/elected the following individuals to Fellow and the Executive Committee approved these in November 2017:

Dr. James Garrison
*For contributions in developing and applying GNSS reflectometry methods for space-based and airborne remote sensing of oceanography, agriculture and hydrology, and expanding these methods to other signals-of-opportunity.*

Dr. David Last
*For distinguished and sustained technical and strategic contributions, leadership, and guidance to fellow practitioners in terrestrial and space-based positioning, navigation, and timing (PNT) solutions.*

Dr. Yuanxi Yang
*For leadership and technical contributions to the development of the Chinese BeiDou Navigation Satellite System and his effort in promoting international collaboration in satellite navigation.*

**Motion: Council ratifies the approved 2018 Fellows as outlined above.** Motion made by John Raquet, seconded by Gary McGraw and passed by the Council.

It was proposed the following serve on the 2019 Fellow Selection Committee:

**Motion: Council approves the following as members of the 2019 Fellows Selection Committee: Dr. John Betz (Chair), Dr. Anthea Coster, Dr. Pratap Misra, Tom Stansell, Dr. Peter Teunissen and Karen Van Dyke.** Motion made by John Raquet, seconded by Todd Walter and passed by the Council.

It was noted in the Fellows report that currently, the Fellow Selection Procedure prescribes primary factors for evaluation criteria: distinguished sustained professional contributions to the arts and sciences of navigation in one or more of technology, management, practice, and teaching. The Procedure also identifies secondary factors involving participation in and service to
the ION. However, the Fellow Selection Procedure currently provides no guidance concerning how these orthogonal primary and secondary factors should be applied by the Fellow Selection Committee. Approaches include:

1. Assess nominees based on primary factors, but only endorse nominees that meet a minimum level of participation in and service to the ION. In this case, it would be useful for the ION Council to prescribe this approach, and provide guidance concerning the minimum level of service to the ION.

2. Assess nominees based on a combination of primary and secondary factors. In this case, participation in and service to the ION could compensate for less distinguished sustained professional contributions. If this is the intent of the ION Council, it should be prescribed explicitly, with guidance concerning the relative weighting between primary and secondary factors.

3. Additional approaches should be described in the Fellow Selection Procedure.

It was noted that given the different views on dealing with primary and secondary factors that committee members expressed during deliberations this year, the committee suggested that the ION Council clarify its intent concerning use of these primary and secondary factors in assessing Fellows nominees for endorsement. Considerable discussion followed.

See Attached File: Fellow Primary and Secondary Factor Discussion Charts 1-29-18

Action: An ad hoc Fellow Awards Policy Committee be formed to review the selection criteria and provide Council with a recommended revision to the Fellow Selection Procedure that will provide clear guidance to future Fellow Selection Committees. The ad hoc committee will work in cooperation with the ION president, seek the advice of current ION Fellows, and bring a proposed recommendation to the Council at the September 2018 Council meeting.

Postscript: The week following the meeting Dr. Raquet appointed Dr. Todd Walter to serve as the ad hoc chair of the Fellow Awards Policy Committee. Dr. Walter accepted the action to review the Fellow Awards Policy and provide recommendations for clarification to Council at the September 2018 Council meeting.

Treasurer’s Report: F. van Graas

See Attached Files:

Treasurer Report January 2018 Council
ION Financial Statements 3.31.17
ION Governance Comm Letter 3.31.17
ION Internal Control Letter 3.31.17
Budget 2018-19
Conflict of Interest Disclosure Form 2018

Dr. Frank van Graas, Treasurer, reviewed the FY 2016-’17 audit and FY 2018-’19 budget. It was noted that Lisa Beaty had sent a draft copy of the proposed 2018-’19 budget to Executive
Committee, Finance Chair, ION Treasurer and Satellite Division Treasurer for review in December 2017. The Executive Committee had then approved the 2018-’19 budget for formal presentation to Council in January 2018.

Motion: Council ratify the Executive Committee’s approval of the FY 2016-17 Audited Financial Statements, Governance Communication and Management Letters. Motion made by Frank van Graas, seconded John Nielson and passed by the Council.

Motion: The Executive Committee approves CliftonLarsonAllen, CPA’s for ION’s FY 2017-’18 audit. Motion made by Frank van Graas, seconded by John Nielson and passed by the Council.

Motion: Council approves the 2018-’19 budget as submitted. Motion made by Frank van Graas, seconded by Mikel Miller and passed by the Council.

Conflict of Interest Disclosures for 2018: Dr. van Graas reviewed the Conflict of Interest Disclosure Form and requested Council members present complete the form and submit it prior to the end of the Council meeting. See Attached File: Conflict of Interest Disclosure Form 2018

Ethics Policy: J. Nielson

John Nielson, ad hoc Ethics Chair, reported that at the January 2017 Council meeting he had been given the action item to propose the role the ethics policy should play in ION and the ION’s membership; and the role and scope of the Ethics Chair/Committee. Nielson had presented a draft Ethics Policy Enforcement Process to Council at the September 2017 Council meeting. Following the September 2017 Council meeting the proposed Ethics Policy Enforcement Process was distributed to Council with notice and intent for Council to vote on ratification at the January 2018 Council meeting. See Attached File: Ethics Policy Advance Distrib to Council 11-17-17

It was reported that modifications had been made to the document in December based on comments received and a modified proposal had been posted to the advance Council viewing website and notice given to Council with notice of Council meeting. See Attached File: Ethics Policy Advance Posting Council Advance View Website 12-6-17

Nielson reviewed the proposed Ethics Enforcement Process with Council. See Attached File: Ethics Policy Enforcement_Rev A Presentation

Motion: Council adopt the following Ethics Enforcement Process:

Ethics Enforcement Process

• Any ION member can report a possible ethics violation to Ethics Chair. Where possible, the identity of the reporting member will remain private. (Likely source of violations might be officer nominations or awards committees.)
• The Ethics Chair, ION President, and ION Executive Vice President review the concern and decide (by vote if necessary) whether to refer the matter to the executive committee.
  – If allegations are clearly groundless, then the matter can be closed without further action.
  – If the allegations may have merit, it should be referred to the executive
committee to make a determination.
  • The Executive Committee will decide, by vote, on:
    – Whether or not an ethics violation has occurred.
    – If it has occurred, what should be done about it.
  • The Ethics Chair will inform the person accused of the violation as to the ethics committee’s decisions about whether a violation has occurred, and if so, what should be done about it.
  • If there is a time constraint, the Executive Committee will attempt to resolve the matter ahead of the time constraint. However, if that cannot be done, the Executive Committee has the option of taking a temporary action (such as removing someone from consideration for an award for that year) before making a final decision as to whether there has been an ethics violation.
  • When the process is complete, the Ethics Chair will inform the member who reported the possible ethics violation that the Executive Committee has completed its review of the concern.
    – Nothing else should be reported to the person who reported the possible ethics violation.
  • If the possible ethics violation involves a member of the Executive Committee or the Ethics Chair, they will be recused from the procedure described above. If necessary, the ION President will fulfill the role of the Ethics Chair.
  • All matters involving ethics violations shall be considered confidential and shall not be shared with people who do not have a right to know, according to this policy.

Motion made by John Raquet, seconded Frank van Graas and passed by the Council.

See Attached File: Ethics Enforcement Process Approved Council Jan 29 2018

SDR Metadata Standard Report: S. Gunawardena

Dr. Sanjeev Gunawardena, SDR Metadata Chair, reported that the public comment period for the SDR Metadata Standard opened in September and comments were received through December 31. This public comment period was advertised by ION National Office to the ION’s email list, in editorial articles in the ION Newsletter, Inside GNSS and GPS World magazines. It was reported that the committee was in the process of sifting through comments and responding and then would be revising the standards document and re-issuing for a second public comment period. Following this would be the legal review. It was anticipated if legal review took less than a month that the standard would be open to issue in September 2018.

Appointment ITM 2019 and PTTI 2019 Program Chairs: J. Raquet/R. Dupuis

It was reported the following would serve on the January 2019 committee:

  ITM General Chair: Dr. Jiyun Lee, KAIST, South Korea
  ITM Program Chair: Dr. Olivier Julien, ENAC, France
  PTTI General Chair: Dr. James Hanssen, USNO
  PTTI Program Chair: Dr. Michael Coleman, NRL

NEW BUSINESS
Dr. Chris Hegarty asked Council for references for any potential ION GNSS+ plenary speakers.

Dr. Terry Moore reported to Council on the RIN’s efforts to create professional certification for navigation engineers in the UK.

Dr. John Raquet closed the meeting encouraging everyone to work to involve new people in ION.

The meeting adjourned at 7:30 p.m.

Additional Documents Included with these Minutes:

   Calendar 2018