**TC Recertification Questionnaire - 2017**

DATE : April 27, 2017

*DEMOGRAPHICS*

1. TECHNICAL COMMITTEE (TC) NAME:

Data Storage Technical Committee

1. TC CHAIR AND OTHER OFFICERS:

 Brian Kurkoski - Chair (2017-2018)

 Xinmiao Zhang - Vice-Chair from Industry (2017-2018)

 Shayan Srinivasa Garani - Vice-Chair from Academia (2017-2018)

 Jeongseok Ha - Secretary (2017-2018)

 Qi Qi - Treasurer (2015-2018)

1. YEARS IN POSITION: See above
2. YEAR OF NEXT ELECTION: December 2018
3. REPORTING AUTHOR: Brian Kurkoski

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1. NUMBER OF TC MEMBERS:
* 2013: 117
* 2014: 190
* 2015: 211
* 2016: 225
1. AVERAGE NUMBER OF ATTENDEES TO TC MEETINGS: 15
2. TC URL: http://dstc.committees.comsoc.org/
3. HOW OFTEN IS WEBSITE UPDATED? The website is updated whenever there is a new event such as a call for papers or upon request. Minutes of the last TC meetings and newsletters are uploaded to the DSTC web site soon after the closure of the meetings.
4. TC E-MAIL EXPLODER: dstc@ieee.org is an IEEE listserv. The DSTC email list is handled by the DSTC Secretary. Details of how to sign up are on the web site.
5. IS THERE AN OFFICIAL MEMBERSHIP LIST? (if not, describe membership criteria):

Yes, the official list is the names, affiliations and email address on listsev. As described on the web site, being on the mailing list is equal to being a member, unless the member requests otherwise. New members provide their name and affiliation when they sign up. For some long-term members, we only have email addresses.

1. DO YOU HAVE AN “ACTIVE” MEMBERSHIP TIER AND WHAT ARE THE ELIGIBILITY CRITERIA FOR ACTIVE MEMBERSHIP?

Yes, we do have an “Active” membership tier and the eligibility criteria are described in Paragraph 1 of the P&P on the web site.

1. DO YOU HAVE A POLICY & PROCEDURES DOCUMENT? IF SO, DOES IT COVER THE FOLLOWING ITEMS?

Yes, we do have a Policy & Procedures document, and it is posted in DSTC website. All the following listed items are covered

* Definition of elected and appointed officers, as well as nomination and election procedures;
* Membership criteria and eventual tiers;
* Planning, announcement and conduction of TC meetings;
* Budget and expenses;
* Support of COMSOC activities, such as publications, meetings and membership development;
* Support of COMSOC activities in standardization;
* Information dissemination activities, such as newsletter and web pages, and other areas as appropriate;

(If these points are not included in you P&P document, it should be reformulated appropriately and approved.)

#### DISCIPLINES

1. TC CHARTER (as it appears in your website):

The Data Storage Technical Committee (DSTC) promotes advances in state-of-the-art communications, signal processing and coding technologies to enhance data storage systems, in order to achieve high storage densities, fast access, and low error rates. This is accomplished by activities such as sponsoring technical sessions at major conferences, organizing workshops and tutorials, and organizing special issues of IEEE journals and magazines.

1. OTHER TCs WITH PARTIAL OVERLAP IN AREAS OF INTEREST:

In past years, it was said that DSTC has overlap with the Cloud Communications and Networking Emerging Technical Committee. Some DSTC members’ technical areas have overlap with the Communication Theory Technical Committee.

#### ACTIVITIES

1. CONFERENCES/WORKSHOP/SYMPOSIA/PANELS/TUTORIALS YOUR TC IS ACTIVELY INVOLVED IN (such as having members in TPC, having endorsed COMSOC co-sponsorship, etc.; please specify if the events are/are not cosponsored by COMSOC):

ComSoc Sponsored. DSTC is heavily involved with organizing ICC SAC Data Storage Track (2013 Track chair: Tiffany Ji Ling; 2014: Brian Kurkoski; 2015: Xinde Hu) Globecom SAC Data Storage Track (2013: Edward Au, 2014: Lara Dolecek, 2015: Haitao Tony Xia), ICNC (2014: Haitao Tony Xia and Yiran Chen, 2013: Lara Dolecek and Brian Kurkoski), IEEE Intermag.

ComSoc Non-Sponsored. Non-Volatile Memories Workshop (NVMW) (all years) has DSTC members as organizers (Paul Siegel and Eitan Yaakobi) and TPC members (numerous, for example Xiamiao Zhang 2012–2014). Flash Memory Summit (FMS) has had participation from DSTC members, including Student Coordinator Lara Dolecek, who has served as the student outreach coordinator at FMS for the past several years; many of the student participants at FMS are published authors in the DSTC-sponsored venues listed above. This outreach also benefits proliferation of results from the society as the FMS event is attended by thousands of industry colleagues every year.

1. PUBLICATIONS YOUR TC IS ACTIVELY INVOLVED IN (such as having members as Editor in Chief, associate editors, etc.; please specify the kind of involvement and whether the publications are IEEE or not):

1. *IEEE Transactions on Magnetics*, Prof. JR Cruz is an editor, (2) *IEEE Journal on Selected Areas in Communications* issue on “Communication Methodologies for the Next Generation Storage Systems”, May 2014 with 22 articles (Guest editors included DSTC members: Lara Dolecek (lead), Jehoshua Bruck, Anxiao (Andrew) Jiang, Bane Vasic). (3) *IEEE Journal on Selected Areas in Communications* issue on “Channel Modeling, Coding and Signal Processing for Novel Physical Memory Devices and Systems,” September 2016 with 19 articles (guest editors included DSTC members: Shayan Garani Srinivasa, Ravi Motwani, and Bane Vasić).
2. DOES YOUR TC USUALLY ADVANCE CANDIDACIES FOR IEEE/COMSOC AWARDS (such as best paper awards, career awards, international research awards, etc.)?

Yes, we do advance candidacies for IEEE/COMSOC Awards such as best paper/student paper award each year.

1. STANDARDIZATION COMMITTEES AND PROJECTS YOUR TC IS ACTIVELY INVOLVED IN:

Lara Dolecek along with other members of the data storage community participated in a series of industry-organized meetings aimed at standardizing channel codes for flash memories, held between 2014 and 2016. The series of meetings were dedicated to standardizing 1kB and 2kB channel codes for flash memories under IEEE P1890. Recently, there have been a large number of mergers and acquisitions in the data storage industry. As a consequence, there was not much more industry-driven progress on code standardization, on the other hand, emphasis changed to keep the research and development going forward.

1. DOES YOUR TC HAVE A LIAISON TO THE COMSOC STANDARDS BOARD? IF NO, EXPLAIN WHY NOT. IF YES, SHARE THE TC LIAISON’S EXPERIENCE, INCLUDING ISSUES, SUCCESS STORIES, AND SUGGESTIONS TO IMPROVE THE RELATIONSHIP BETWEEN TCs AND STANDARDIZATION ACTIVITIES.

Lara Dolecek (Univesity of California, Los Angeles) is the DSTC Standards Liaison. There has been little, if any, communications between DSTC and the ComSoc Standards Board.

1. IDENTIFY THE MEMBERS YOUR TC HAS ADVANCED FOR IEEE COMSOC DISTINGUISHED OR EXPERT LECTURER POSITIONS IN THE LAST 3 YEARS:—
2. IDENTIFY THE MEMBERS YOUR TC HAS SUCCESSFULLY ADVANCED FOR CONSIDERATION AS IEEE SENIOR MEMBERS OR FELLOWS IN THE LAST 3 YEARS: Haitao Tony Xia was advanced as fellow.
3. LIST THE AWARDS YOUR TC IS CURRENTLY ASSIGNING (best paper, career, etc.):

IEEE Data Storage Best Paper Award

IEEE Data Storage Best Student Paper Award

Award committee 2015 co-chairs: Jeongseok Ha and Kannan Ramchandran. 2014 co-chairs: Shayan Garani Srinivasan and Georgios-Alex Dimakis. 2013 chair: Edward Au.

1. IDENTIFY THE TCs WITH WHICH YOUR TC IS (OR SHOULD BE) COLLABORATING? (please provide specific instances):
2. LIST THE MAIN ACTIVITIES OF YOUR TC IN THE LAST 3 YEARS (2013 to 2015, with specific information like titles, locations, TC involvement, etc.):

(1) Organization of data storage tracks at ICC and Globecom each year (Question 16 for details) (2) Organizing two issues of *IEEE Journal on Selected Areas in Communications* (Question 17 for details) (3) Organization of the two DSTC best paper awards (Question 23 for details)

*GENERALITIES*

1. HOW FREQUENTLY (AND IN WHAT OCCASIONS) DO YOUR TC MEMBERS MEET?

Twice a year, we have TC meetings at ICC and Globecom.

1. MENTION WHAT YOU CONSIDER THE MAJOR ACHIEVEMENT OF YOUR TC IN THE LAST 3 YEARS:

Items (1), (2) and (3) in Question #25.

1. LIST THE MAIN PROBLEMS YOUR TC HAD IN THE RECENT PAST (relationship with conferences TPC, with COMSOC officers, etc.)

For ICC 2015 SAC Data Storage Track, due to a request from ComSoc, the TPC was massively expanded to about 70 members, from the usual 25 members. This fortunately increased the number of submissions, but created substantial additional work for the Track Chair Xinde Hu. This request came after the track had already been approved — it would have been better to handle such expansions before the track approval, as we would have asked for multiple Track Chairs to spread the load.

1. WHAT COULD COMSOC DO TO HELP YOUR TC IN ITS OPERATIONS?

Recognizing that promotion of Senior Members and Fellows is of importance, it would be helpful if we could receive a reminder email in advance of the deadline. This could contain some boilerplate text, which we would then send to the members. I’m sure other TCs would also benefit.

1. WHAT ARE YOUR PLANS TO INCREASE YOUR GLOBAL MEMBERSHIP (AND, IN PARTICULAR, YOUR INDUSTRY MEMBERSHIP)?

Since we began using the IEEE listserv, there has been organic growth of the regular members (see Question 6). In order to increase the participation of the active members (about 25 people), we plan to create a new mailing list, to stimulate discussion on how to advance the DSTC’s actives.

We are interested in having NVMW (Question 16) apply for Technical Co-Sponsorship from ComSoc, and DSTC can assist with this. This would increase visibility to industry.

1. HOW OFTEN DO YOU ROTATE TC CHAIRS (present Bylaws rule is every two years)?

Every two years. The TC Chair holds the position for only 2 years.

#### NEW AREAS

1. LIST ANY TECHNICAL AREAS YOU CONSIDER WORTH OF BEING INCUBATED IN THE EMERGING TECHNOLOGY COMMITTEE TO POSSIBLY BECOME A NEW TC:

Signal processing and coding for emerging non-volatile memory systems, such as PCM, MRAM, etc. naturally fall within the scope of the DSTC. There have been some technical contributions in distributed storage as well.

### ADDITIONAL COMMENTS

1. PLEASE ADD ANY ADDITIONAL INFORMATION PERTINENT TO RECERTIFICATION AND/OR COMMENT ON ANY ASPECT OF THIS SURVEY:

**THANK YOU!**