

## TC ANNUAL REPORTING FORM

### IMS Technical Committee

TC-9 Subcommittee on Capacitive Sensing

### Reporting period

01/01/19

31/12/19

01/05/20

Starting date (dd/mm/yy)

Ending date (dd/mm/yy)

Date of submission (dd/mm/yy)

**Website** <http://ieee-ims.org/content/tc-9-sensor-technology>

**Last update**  
(mm/yy)

### TC Chair or co-Chairs

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
Georg		Brasseur	Graz University of Technology			Georg.brasseur@tugraz.at	

### Secretary (check the right box)

Present

Not Present

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
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### TC Membership list<sup>(\*)</sup>

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	TC assignments (joining year)
Georg		Brasseur	Graz University of Technology			<a href="mailto:Georg.brasseur@tugraz.at">Georg.brasseur@tugraz.at</a>	
Thomas		Bretterklieber	Graz University of Technology			<a href="mailto:Thomas.bretterklieber@tugraz.at">Thomas.bretterklieber@tugraz.at</a>	

\* Please add as many rows as needed

Thomas	Suppan	Graz University of Technology	<a href="mailto:suppan@tugraz.at">suppan@tugraz.at</a>
Robert	Gao	Case Western Reserve University	<a href="mailto:Robert.gao@case.edu">Robert.gao@case.edu</a>
Markus	Neumayer	Graz University of Technology	<a href="mailto:neumayer@tugraz.at">neumayer@tugraz.at</a>
Stoyan	Nihtianov	Delft University of Technology	<a href="mailto:s.nihtianov@tudelft.nl">s.nihtianov@tudelft.nl</a>
Stefan	Puttinger	Johannes Kepler University Linz	Stefan.puttinger@jku.at

### TC mission – field of expertise (max. 1000 char. Including spaces)

The TC-9 SCS bundles research activities in the field of capacitive sensing technology and its application in industrial environments:

- Develop, promote and support capacitive sensor-related technologies, user applications
- Develop new methods to meet industry's need for cost efficient, robust, reliable and accurate sensors
- Review capacitive sensors and their applications in the user community, government and industry
- Provide forums such as workshops and symposia where such technologies can be discussed
- Maintain liaison with other societies and organizations working in the same or related areas

### TC meetings in the reporting period<sup>(\*)</sup>

Date (dd/mm/yy)	Online / Face2Face	Attendance (number)	Information sent within 4 months to (Yes/No)			
			TC Members	Chair of TSAC	IM Magazine	Other (specify)

### Minutes of the yearly meeting (separate file)<sup>1</sup>:

<sup>1</sup> Yes/No, date of the yearly meeting;

\* Please add as many rows as needed

## Participation in Society sponsored Events (Conferences, Symposia, Workshops) (\*)

Name of the Event	Starting date (event) (dd/mm/yy)	Ending date (event) (dd/mm/yy)	Date Participation (dd/mm/yy)	Type of participation (Yes/No)			
				Sponsorship	Session	Tutorial	Other (specify) <sup>2</sup>
I2MTC 2019	20-05-19	23-05-19		No	Special Session 4: Capacitive Sensing in Harsh Environments		
I2MTC 2019	20-05-19	23-05-19		No		Bayesian Inference for Measurement Problems. Presenter: Dr. Markus Neumayer	

## Involvement in standard development(\*)

Capacitive sensors are used in so many products today that there is no potential left for standardizing specific hardware topologies or software algorithms. So far we are not involved in IEEE standards development.

## Participation in the development of Society Educational Programs(\*)

Program name	Involvement of chapters and sections	Activity in the reporting period, including dates	Notes, attendance
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## Other Activities (tutorials, teaching, career, cooperation, publications, joint activity with chapters or sections) (\*)

Type of activity	Starting date (dd/mm/yy)	Ending date (dd/mm/yy)	Activity in the reporting period	Notes, attendance
Video recording for short TC overview for IMS website	20/05/19	23/05/19	Video topics: Introduction to capacitive sensing Application examples for capacitive sensing Activities and collaborations	Georg Brasseur, Markus Neumayer

## Recommended candidates(\*)

Type (ADCOM, Fellow, Award –specify-)	First Name	Second Name	Family Name	Affiliation /Address	Motivation
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<sup>2</sup> For example, Involvement in reviewing papers (and indicate approximate number of paper reviews for the listed event)

\* Please add as many rows as needed

**TC operating Plan: near-term plans for the upcoming year, including scheduled meetings, activities, and so on (max. 1000 char. Including spaces)**

- Committee members write papers, review papers for IEEE conferences, and organize Special Sessions like the "SP9: Innovative Measurement Systems for Applications in Harsh Environments" at I2MTC2020.
- Continuing a lecture at Graz University of Technology on "Physical Sensor Effects": Master level course: course covers sensing effects used in I&M for industrial and automotive applications. Strong focus on TC-9 topics, around 30 attendees.
- Foster cooperation between Members of TC-20 "Transportation Systems in Measurements" and TC-9 SCS to exchange ideas and students.

**TC operating plan: long term vision from 2-5 years out, based on IMS Strategic Plan, including areas of strength , areas for improvement, how is the subject area going to change, planned actions for lifting achievement succession plans etc. (max. 1000 char. Including spaces)**

The TC-9 SCS bundles research activities in the field of capacitive sensing and their application in industrial environments.

Research activities in the field of capacitive sensing:

- Develop, promote and support capacitive sensor-related technologies, user applications
- Develop new methods to meet industry's need for cost efficient, robust, reliable and accurate sensors
- Review capacitive sensors and their applications in the user community, government and industry
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Industrial and Academic Collaborations:

- Introducing Electrical Capacitance Tomography to industrial applications
- Expanding the global academic partner network; new partners found e.g. at Indian Institute of Technology Madras, University of Bayreuth etc.

Knowledge Transfer for Capacitive Sensing:

- Guest lectures on sensor modeling and simulation of capacitive sensors in several master programs
- Tutorials at relevant conferences (e.g. I2MTC)

**TC convergence, synergy, cooperation with other TC, from I&M or other societies (max. 1000 char. Including spaces)**

Cooperation and synergy with:

- IEEE Power Electronics Society (PELS)
- Sensors Council

\* Please add as many rows as needed



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Close cooperation between members of TC-20 "Transportation Systems in Measurements" and TC-9 SCS.

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**Comments/Suggestions (max. 1000 char. Including spaces)**

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\* Please add as many rows as needed