



IFAC TC 7.1 “Automotive Control”

TC Meeting @ IFAC AAC2013, Tokyo

September 5<sup>th</sup>, 2013

Gianfranco Rizzo

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# Agenda

1. Report on TC activities.
2. Planning for IFAC WC 2014.
3. Preparatory actions for TC Chair election.
4. Any other business.

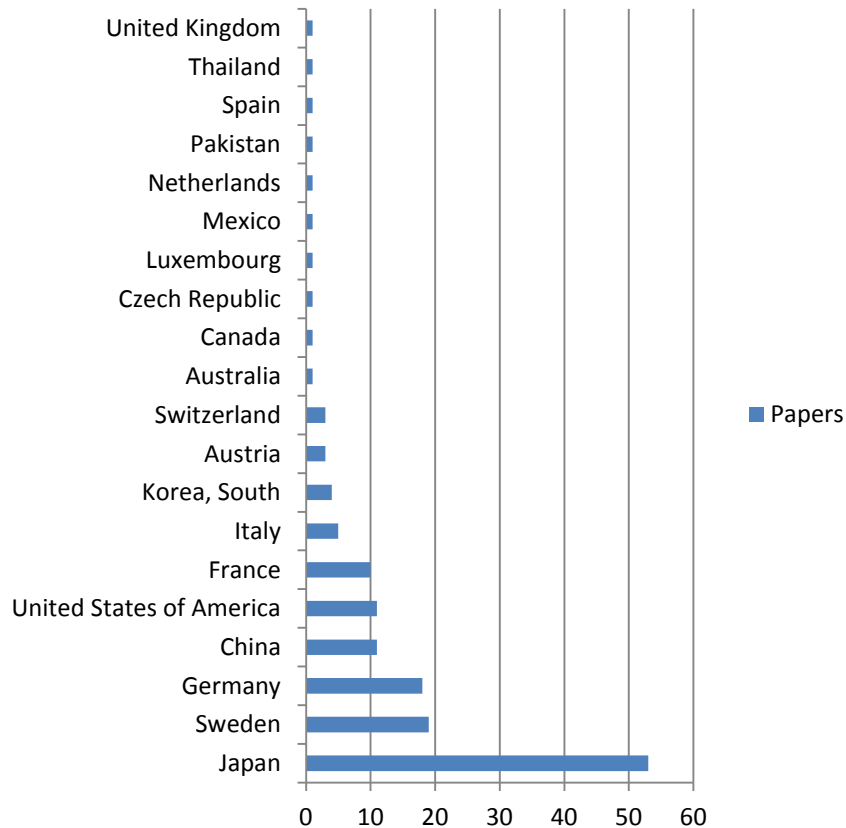


# REPORT ON TC ACTIVITIES



# AAC13: some figures

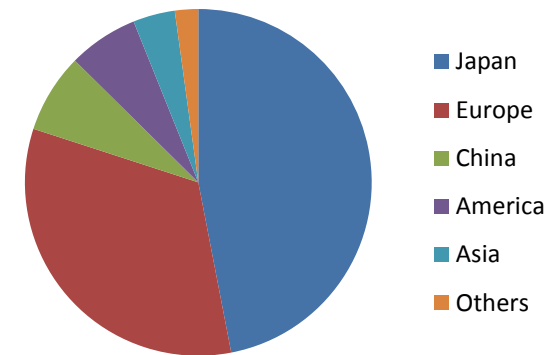
Papers



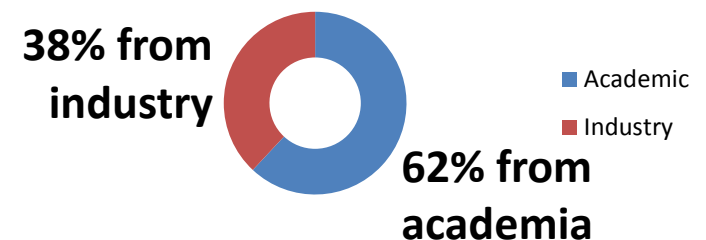
**147 Papers**

**230 Participants**

Participants: Regions



Participants





# AAC13 - Authors per country

Country	Contributed and Invited Papers in Program (All Authors)	Contributed and invited submissions (CA)	Contributed and invited papers in program (CA)	Session proposal submissions (CA)	Invited sessions in program (CA)
Japan	170	54	53	3	3
Sweden	59	21	21	1	1
Germany	58	18	18	0	0
France	41	10	10	0	0
China	35	13	11	0	0
United States of America	33	13	11	0	0
Italy	25	5	5	0	0
Korea, South	15	4	4	0	0
Switzerland	11	3	3	0	0
Austria	10	3	3	0	0
Canada	4	1	1	0	0
Netherlands	4	1	1	0	0
United Kingdom	4	1	1	0	0
Czech Republic	3	1	1	0	0
Mexico	3	1	1	0	0
Belgium	2	0	0	0	0
Luxembourg	2	1	1	0	0
Pakistan	2	1	1	0	0
Singapore	2	0	0	0	0
Thailand	2	1	1	0	0
Australia	1	1	1	0	0
Hungary	1	0	0	0	0
Spain	1	1	1	0	0
	0	0	0	0	0
Malaysia	0	1	0	0	0
Totals	488	155	149	4	4

# AAC13: some figures

Area	Contributed	Industrial	Invited	Invited session
<u>Active Safety and Driver Assistance Systems</u>	27	1		
<u>Alternative Power Systems</u>	27		2	
<u>Combustion Engine Control - Conventional Drive Train</u>	32	4		
<u>Design and Engineering</u>	17	1	18	4
<u>Vehicle Dynamics and Control</u>	18		1	
Total	121	6	21	4

**Accepted papers and areas**

# Keywords (complete report)

Keyword	First keyword count	Total count
Combustion Modeling and Control: Spark Ignition, Compression Ignition, Homogeneous Charge Compression Ignition*	25	36
Plant Modelling and System Identification*	15	31
Energy Management*	19	30
XEV (HEV, EV, FCEV, etc.)/Solar-Powered Vehicles*	9	30
Model-based Calibration*	5	20
Integrated Motion Control: Direct Yaw Control/Electronic Stability Control, 4 Wheel Steering, X-by-Wire, Active Suspensions and Roll Bars*	8	19
Active Chassis Systems: Brake, Steering, Suspension Systems*	11	18
Autonomous Driving and Collision Avoidance: Sensor Fusion, Modeling of the Environment, Control Architectures*	9	18
Hardware-in-the-loop Simulation*	8	17
Adaptive Cruise Control, Heading Control, Lanekeeping, Driver Warning Systems, Systems Based on Car-to-x-communication*	5	13
Battery Model and Battery Control*	4	13
Gas Exchange Processes: Turbocharging, Supercharging, Variable Valve Technology*	7	12
Rapid Control Prototyping*	5	11
Intelligent Vehicles and Robotics Technology in Vehicles*	5	11
Human Factors in Driver Dynamics or Driver Assistance Systems*	9	10
Vehicle State Estimation: Sensor Development, Sideslip Angle Observation, Tire and Friction Estimation*	4	8
Exhaust Gas Aftertreatment*	3	6
Energy Storage Systems: Electrochemical Systems, Hydrogen Storage, Charging and Infrastructure*	2	5
Diagnosis*	2	5
Model-based Diagnostics*	1	4
Security and Dependability*	3	4
Vehicular Power Networks and Inter-Vehicular Networks*	0	4
Functional Safety and Standardization*	0	3
Integrated Motion Control: Direct Yaw Control/Electronic Stability Control), 4 Wheel Steering, X-by-Wire, Active Suspensions and Roll Bars		7
Totals	159	328

# AAC13 Reviewers

Reviewer Performance for AAC 2013											
	Review er	PIN	Responsiveness			Delivery			Rating offset		
			Count	Cum	%	Count	Cum	%	Count	Cum	Ave
	All reviewe rs		715	553	77	715	438	61	1000	0	0





# Organizing publications on journals

- Special issues on CEP including paper presented at WC 2011 and AAC10 is ready for publication.



# TC STATS



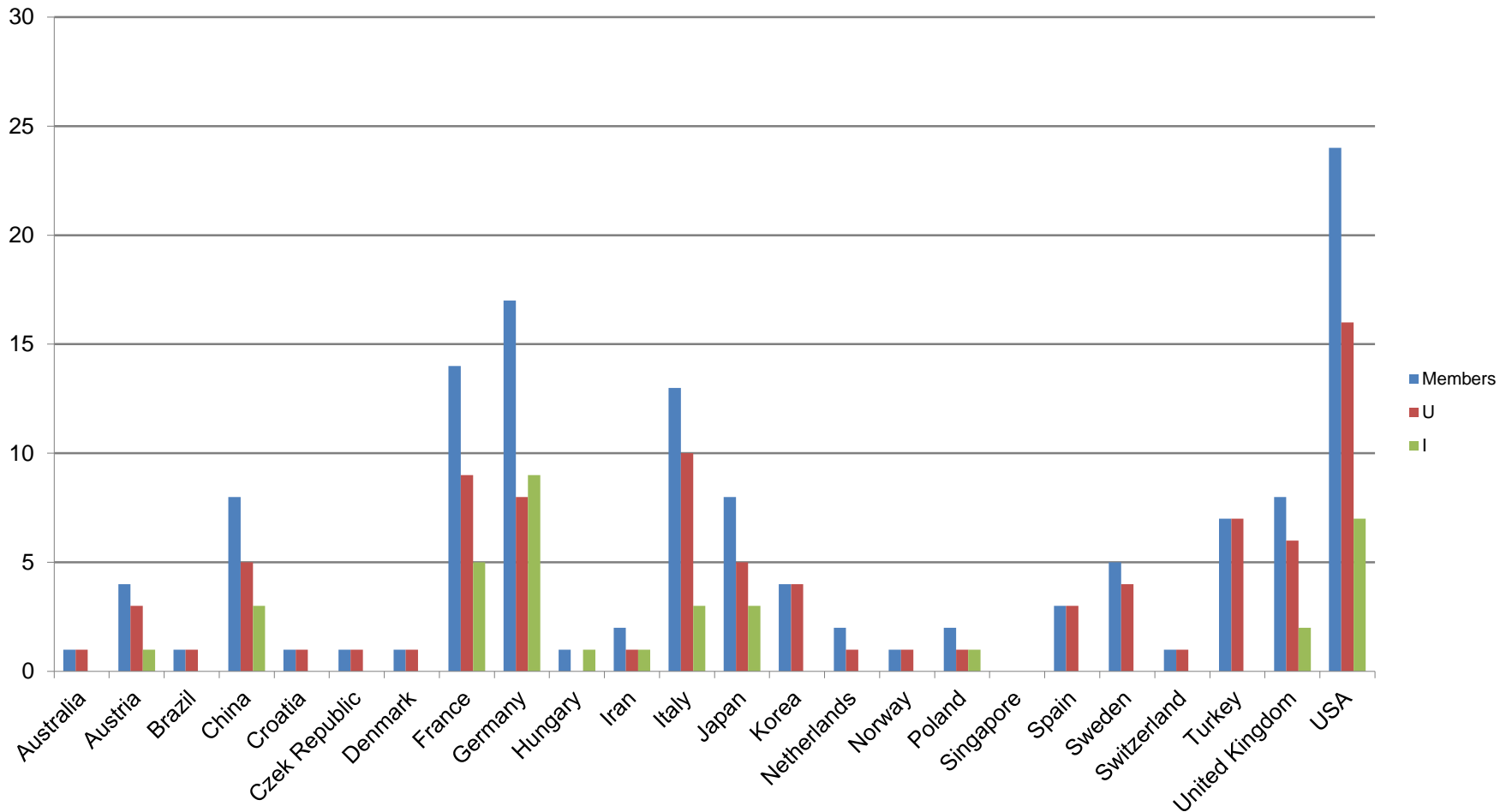
# TC Composition

- **Chair:**
  - **Gianfranco Rizzo**, University of Salerno, Italy
- **Vice-Chair:**
  - **Yann Chamaillard**, Université d'Orléans, France
  - **Lars Eriksson**, University of Linköping, Sweden
  - **Lino Guzzella**, ETH, Zurich, Switzerland
  - **Giorgio Rizzoni**, Ohio State University, Columbus OH, USA
- **Vice-Chair from industry:**
  - **Akira Ohata**, Toyota Motor Corporation
- **Members:**
  - **Regular: 118 (88%)**
  - **Junior: 16 (12%)**
  - **Total: 134**



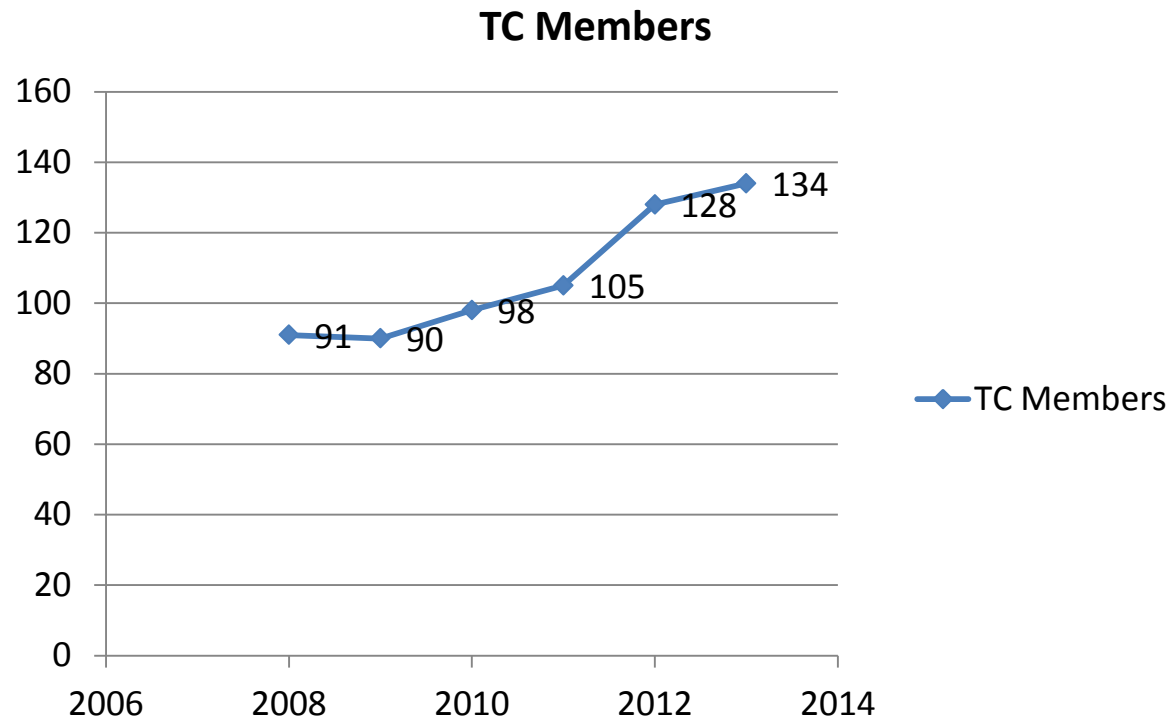
# TC Members per country and affiliation

Members = Total Number of Members – U=University – I=Industry





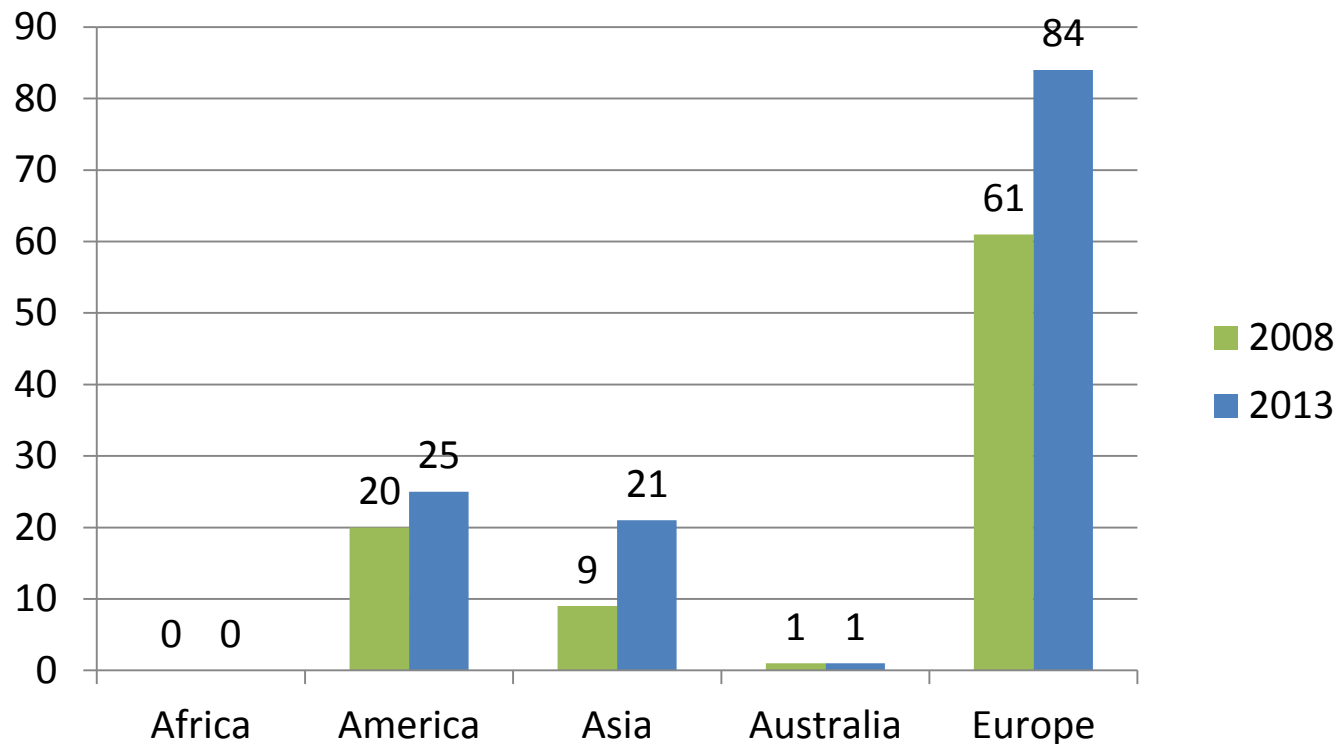
# Trend over years



- Significant increase of TC members since 2008



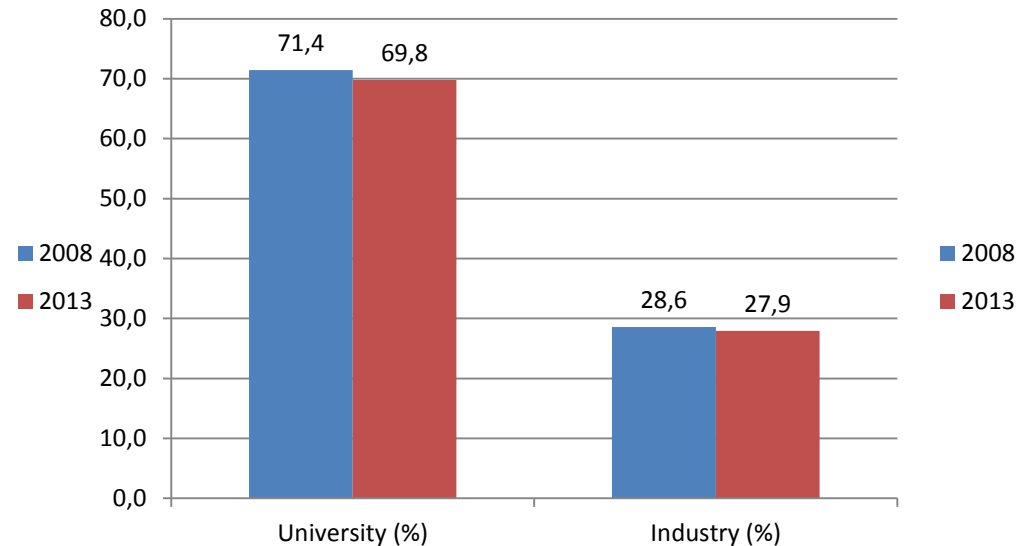
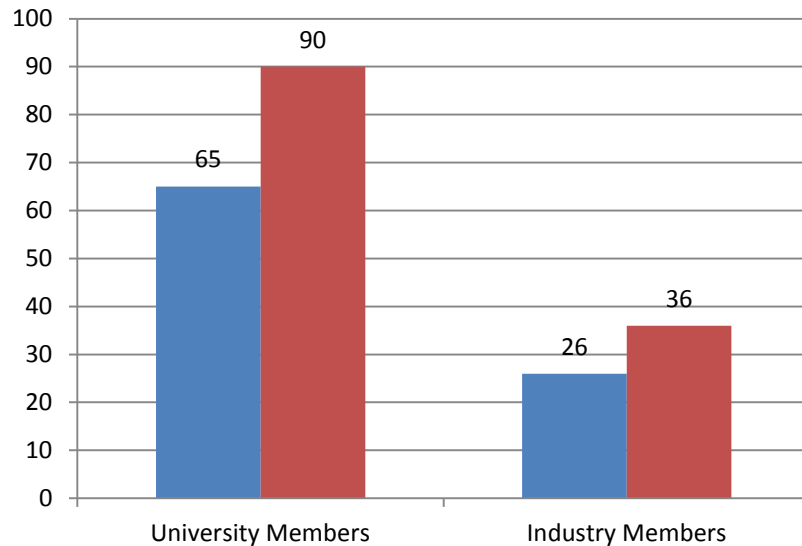
# Regional distribution



- Particularly relevant is the **growth in Asia**, passing from 9 to 21 members, with 6 new members from **China**.



# University and Industry



- In terms of affiliations, the increment is mainly due to a greater number of members from **universities** (from 65 to 90), while also **industry** members have significantly grown from 26 to 36.



# Proposals

- Periodic on-line meetings between chair, vice-chairs and TC Members via Skype, MSN or Video-Conference. → Problems due to time lag between USA, Europe and Japan!
- Useful time: Europe 2 PM, Japan 9 PM, USA (Eastern) 8 AM.
- Use of a social network for the TC? → Facebook, LinkedIn: some cooperation needed!
- Possible re-design of the website with the technology used for IFAC (Plone). Working group needed.





# COMMUNICATION TOOLS



# Visibility on Google

- IFAC TC websites have a very good visibility and top positions on Google.



Google search results for "automotive control".

Web Immagini Maps Shopping Altro ▾ Strumenti di ricerca

Circa 284.000 risultati (0,35 secondi)

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OK Ulteriori informazioni

**IFAC Technical Committee Automotive Control**   
[www.ifac-automotivecontrol.org/](http://www.ifac-automotivecontrol.org/) ▾ Traduci questa pagina  
 Home | Welcome | Scope | Members | Working Groups | Events | Noticeboard |  
 Newsletter | Survey | Photo | Forum | Guestbook | Reserved Area ...

**Automotive Control Centres - Tnt**   
[www.tnt.it/it/services/sol\\_i\\_automotive\\_control\\_centres.shtml](http://www.tnt.it/it/services/sol_i_automotive_control_centres.shtml) ▾  
 Automotive Control Centres. Un team specializzato all'interno dei nostri Automotive Control Centres offre un unico punto di contatto e supporto dedicato ...

**TC 7.1. Automotive Control — IFAC TC Websites**   
[tc.ifac-control.org/7/1/](http://tc.ifac-control.org/7/1/) ▾ Traduci questa pagina  
 IFAC Technical Committee Automotive Control. Home favicon Scope favicon Members favicon News favicon Activities favicon Bulletin favicon Events favicon ...

**Automotive Controls | IEEE Control Systems Society**   
[www.ieeecss.org](http://www.ieeecss.org) > Technical Activities ▾ Traduci questa pagina  
 The scope of interest of the Technical Committee on Automotive Control covers modeling, simulation, identification, estimation, control and diagnostics of ...

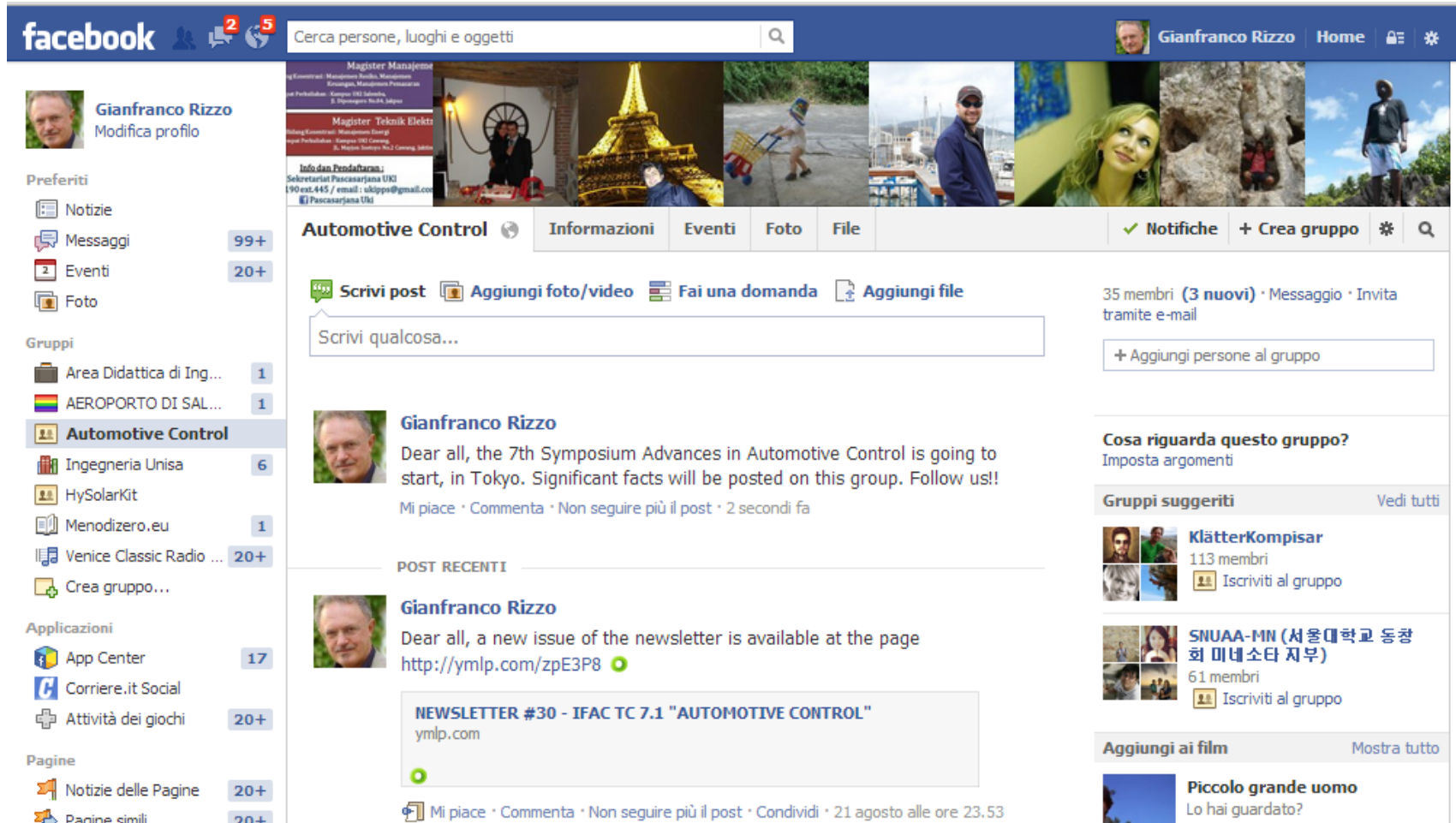
# Newsletters

## Newsletter Archives:

Subject	Date
<a href="#">NEWSLETTER #30 - IFAC TC 7.1 "AUTOMOTIVE CONTROL"</a>	Aug 21, 2013
<a href="#">NEWSLETTER #29 - To TC Members only - IFAC PUBLICATIONS</a>	Jun 23, 2013
<a href="#">NEWSLETTER #28 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 - IFAC WC 2014 - AAC16 and AAC19.</a>	May 31, 2013
<a href="#">NEWSLETTER #27 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 - Call for Education Delegates</a>	Feb 26, 2013
<a href="#">NEWSLETTER #26 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 IN JAPAN: DEADLINE EXTENDED</a>	Nov 17, 2012
<a href="#">NEWSLETTER #25 - To the IFAC TC 7.1 Members only - AAC13 IN JAPAN: DEADLINE EXTENDED - INVITED SESSIONS</a>	Nov 17, 2012
<a href="#">NEWSLETTER #24 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 IN JAPAN: DEADLINE IS APPROACHING!</a>	Nov 1, 2012
<a href="#">NEWSLETTER #23 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 IN JAPAN - ICCVE 2012 IN BEIJING - NEW ENTRIES</a>	Aug 2, 2012
<a href="#">NEWSLETTER #22 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 IN JAPAN</a>	Feb 2, 2012
<a href="#">NEWSLETTER #22 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC13 IN JAPAN</a>	Jan 31, 2012
<a href="#">IFAC TC 7.1 Meeting in Milan - Please register</a>	Aug 1, 2011
<a href="#">Low Carbon Economy Summit 2011: Speech Opportunity Available - TC Meeting in Milan</a>	Jun 30, 2011
<a href="#">NEWSLETTER #21 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - TC MEETING AT THE IFAC WORLD CONGRESS IN MILAN - AUTOMOTIVE CONTROL ON FACEBOOK</a>	Jun 30, 2011
<a href="#">NEWSLETTER #21 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - TC MEETING AT THE IFAC WORLD CONGRESS IN MILAN - AUTOMOTIVE CONTROL ON FACEBOOK</a>	Jun 30, 2011
<a href="#">NEWSLETTER #20 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - TC MEETING AT THE IFAC WORLD CONGRESS IN MILAN - AUTOMOTIVE CONTROL ON FACEBOOK</a>	Jun 29, 2011
<a href="#">NEWSLETTER #20 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - IFAC WC 2011: DEADLINE POSTPONED TO OCTOBER 13 - NEW MEMBERS</a>	Sep 24, 2010
<a href="#">NEWSLETTER #19 - IFAC TC 7.1 "AUTOMOTIVE CONTROL"</a>	Jul 31, 2010
<a href="#">NEWSLETTER #18 - IFAC TC 7.1 "AUTOMOTIVE CONTROL"</a>	Jun 8, 2010
<a href="#">NEWSLETTER #17 - IFAC TC 7.1 "AUTOMOTIVE CONTROL" - AAC 2010 DEADLINE EXTENDED TO NOVEMBER 30</a>	Nov 16, 2009

- 30 Newsletters sent from 2008 to sept. 2013 to the whole database (3600+ contacts) or to TC Members.

# Automotive Control Group on Facebook



**facebook** Cerca persone, luoghi e oggetti

**Gianfranco Rizzo** Home

**Automotive Control** Informazioni Eventi Foto File

35 membri (3 nuovi) • Messaggio • Invita tramite e-mail

+ Aggiungi persone al gruppo

**Cosa riguarda questo gruppo?**  
Imposta argomenti

**Gruppi suggeriti** Vedi tutti

**KlätterKompisar**  
113 membri  
Iscriviti al gruppo

**SNUAA-MN (서울대학교 동창회 미네소타 지부)**  
61 membri  
Iscriviti al gruppo

**Aggiungi ai film** Mostra tutto

**Piccolo grande uomo**  
Lo hai guardato?

**Gianfranco Rizzo** Modifica profilo

Preferiti: Notizie, Messaggi (99+), Eventi (20+), Foto

Gruppi: Area Didattica di Ing... (1), AEROPORTO DI SAL... (1), **Automotive Control**, Ingegneria Unisa (6), HySolarKit, Menodizero.eu (1), Venice Classic Radio ... (20+), Crea gruppo...

Applicazioni: App Center (17), Corriere.it Social, Attività dei giochi (20+)

Pagine: Notizie delle Pagine (20+), Pagine simili (20+)

**POST RECENTI**

**Gianfranco Rizzo**  
Dear all, the 7th Symposium Advances in Automotive Control is going to start, in Tokyo. Significant facts will be posted on this group. Follow us!!  
Mi piace • Commenta • Non seguire più il post • 2 secondi fa

**Gianfranco Rizzo**  
Dear all, a new issue of the newsletter is available at the page <http://ymlp.com/zpE3P8>

**NEWSLETTER #30 - IFAC TC 7.1 "AUTOMOTIVE CONTROL"**  
ymlp.com

Mi piace • Commenta • Non seguire più il post • Condividi • 21 agosto alle ore 23.53

- 35 members up to now.
- All TC members subscribing appointed as “Group Administrator” to promote participation.



# Automotive Control on LinkedIn

in Search for people, jobs, companies, and more... Advanced 88 5

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**Automotive Control** 131 members i ↗

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**Members (131)**

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**Angelo Esposito, PhD** 1st  
Project Manager at European Institute for Energy Research (EIFER), Mannheim Area, Germany  
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**Theo Hofman** 1st  
Assistant Professor, Ph.D., M.Sc., Eindhoven Area, Netherlands  
Unfollow · See activity · Send message

**Paolino Tona** 1st  
Research engineer in Automatic Control, Lyon Area, France  
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**Antonio Sciarretta** 1st  
Expert Scientist, Titular of Chair at IFP Energies nouvelles, Paris Area, France  
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# PLANNING FOR IFAC WC 2014



# 19th IFAC WC IN CAPE TOWN

- The 19th World Congress of the International Federation of Automatic Control will be held in Cape Town, South Africa, 24-29 August 2014.
- Important dates are:
  - June 1, 2013: Submission site opens.
  - **October 30, 2013**: Deadline for the submission of full draft contributed/invited/industrial papers; invited session proposals; pre-Congress Tutorials and Workshops proposals; panel discussion session proposals.
  - February 14, 2014: Notification of acceptance
  - March 3, 2014: Preliminary program announcement
  - March 31, 2014: Deadline for the final submissions
  - April 18, 2014: Final program announcement
  - August 23-24, 2014: Pre-Congress Tutorials and Workshops
  - August 24, 2014: Congress opening
  - August 25-29, 2014: The 2014 IFAC World Congress
- Further details at <http://www.ifac2014.org/>

# INVITED SESSIONS ON AUTOMOTIVE TOPICS AT IFAC WC 2014

- **Advances in Mechatronics for Automotive Systems**

Prof. Junmin Wang, Ohio State University, wang.1381@osu.edu;  
 Prof. Seibum B. Choi, Korea Advanced Institute of Science and Technology, sbchoi@kaist.ac.kr; Prof. Lars Eriksson, Linköping University, larer@isy.liu.se; Prof. Ivan Arsie, University of Salerno, iarsie@unisa.it;  
 Prof. Levent Güvenç, Istanbul Okan University, levent.guven@okan.edu.tr  
[https://dl.dropboxusercontent.com/u/19347032/IFAC2014\\_Mechatronics\\_Automotive\\_InvitedSessions\\_CFP.pdf](https://dl.dropboxusercontent.com/u/19347032/IFAC2014_Mechatronics_Automotive_InvitedSessions_CFP.pdf)

- **Vehicles as part of large energy networks: interaction with grid and renewable sources**

Dr. Vincenzo Marano, University of Salerno, vmarano@unisa.it; Prof. Gianfranco Rizzo, University of Salerno, grizzo@unisa.it; Dr. Marco Sorrentino, University of Salerno, msorrentino@unisa.it





# PREPARATORY ACTIONS FOR TC CHAIR ELECTION



# TC CHAIR RENEWAL

- The IFAC Technical Board has established a procedure to identify suitable nominees for the new TC Chairs ([letter](#)). It is required, by November 15, 2013, to:
  - construct a list of the available candidates for the incoming TC chair;
  - organize a vote in the TC by email (if required, i.e. the list is not a singleton)
  - send the name of the preferred candidate to CC-chair and cc-ed to the IFAC secretariat.
- Further information:
  - The TC Chair in charge, Gianfranco Rizzo, is going to complete his second triennium and would be ineligible, according to the IFAC rules.
  - Current terms for TC Chairs expire in 2014 at the upcoming IFAC World Congress in Cape Town, South Africa.
  - The next term for the TC Chairs begins at the 2014 Cape Town Congress and terminates at the 2017 IFAC Congress in Toulouse, France.
  - The TC Chairs for 2014-2017 will be officially elected by the Incoming Technical Board.



# Proposed schedule

- October 1<sup>st</sup>: Send a newsletter to TC members to solicit candidatures.
- October 15<sup>th</sup>: Send a newsletter to TC members with the names of candidates and procedures for voting:
- November 1<sup>st</sup>: Collect voting by email (to Chair and Vice-Chairs in cc).
- November, 10<sup>th</sup>: Send the name of the preferred candidate to CC-Chair and IFAC secretariat.
- *Voting may be organized or by email (open vote) or by a website for secret vote (i.e. <http://www.votingplace.net>).*



# AOB



# PREPARATORY WORK FOR AAC16 BY LARS ERIKSSON



# Participation to TC

- To apply, please send your CV and a picture to the TC Chair at the address:

[info@ifac-automotivecontrol.org](mailto:info@ifac-automotivecontrol.org)

- Possible participation as:
  - Active Member (AM): active participation to review process, working groups etc.
  - Corresponding Member (CM): in a networking position.
  - Junior Member (JM): for people working in Automotive Control area with less of 5 years experience.