IEEE/RSJ International Conference on
Intelligent Robots and Systems

IROS 2015

Workshops and Tutorials Proceedings

Hamburg, Germany

September 28 – October 02, 2015

Conference Venue

✉ CCH
Messeplatz 1
20357 Hamburg
Germany

☎ +49 40 3569 - 0

FAX +49 40 3569 - 2203

⊕ 53.56201, 9.98560
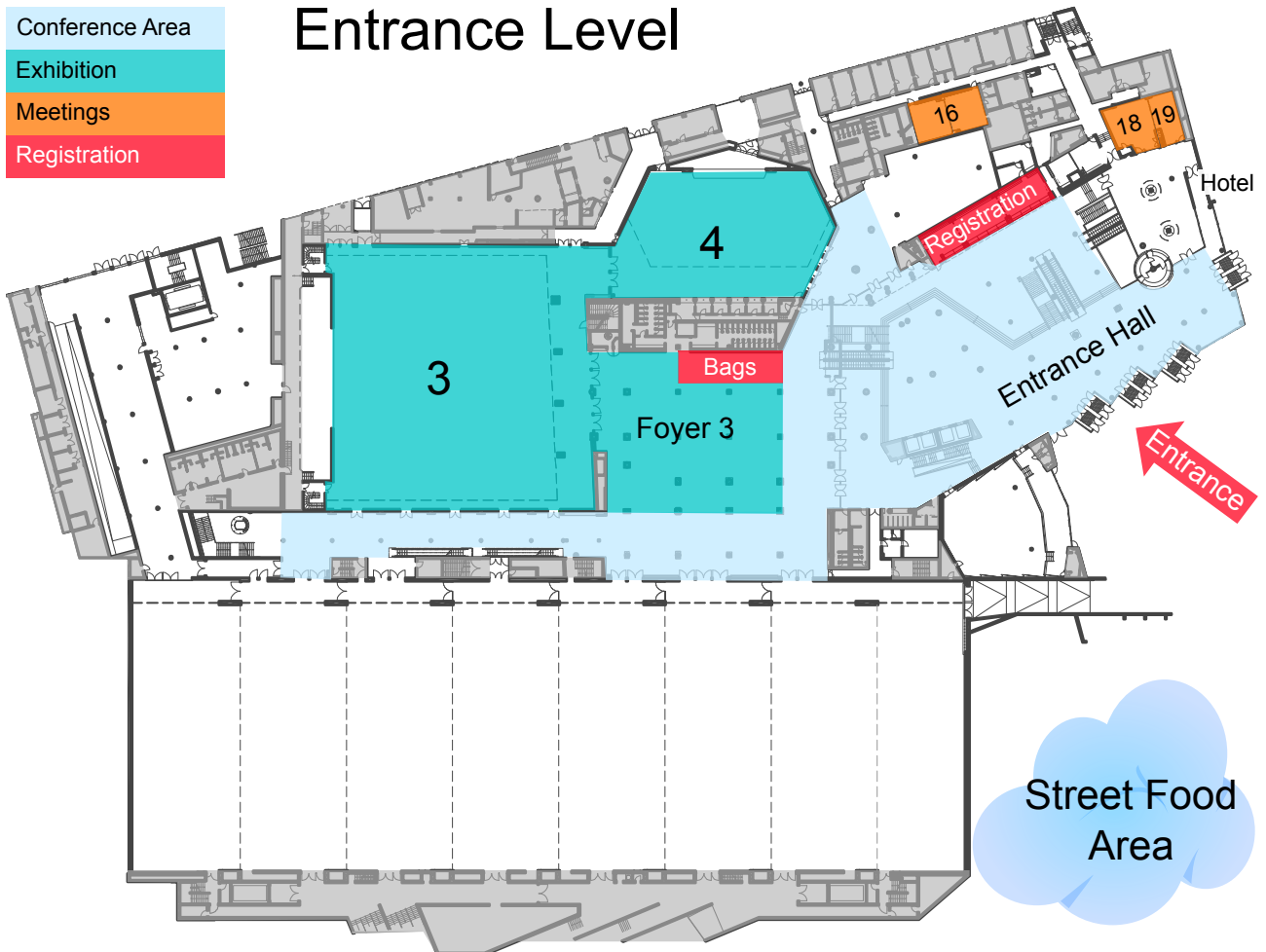N 53° 33' 43.247"
E 9° 59' 8.159"

Conference Desk
☎ +49 40 3569 - 5300

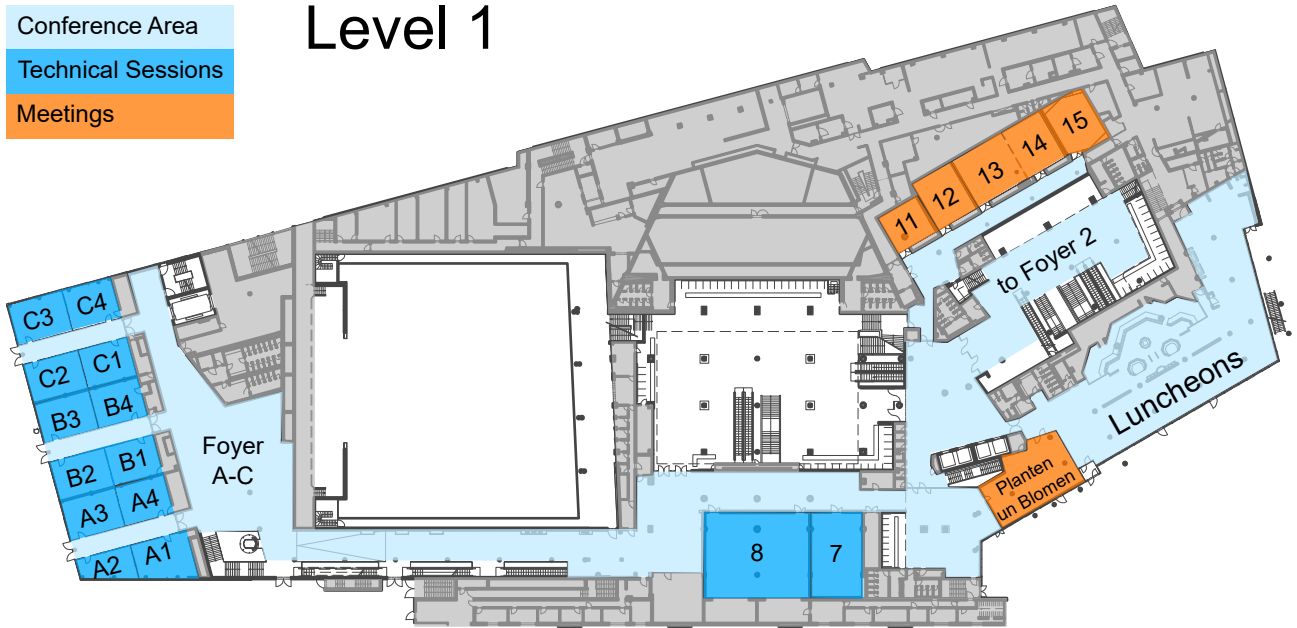**How to reach:** Ⓢ Dammtor: S11, S21, S31   Ⓤ Stephansplatz: U1   Taxi to CCH

Entrance Level

Conference Area
Exhibition
Meetings
Registration

16

18 19

Hotel

Registration

4

3

Bags

Foyer 3

Entrance Hall

Entrance

Street Food Area

Conference Venue and Floorplans

Level 1

Conference Area
Technical Sessions
Meetings

C3 C4
C2 C1
B3 B4
B2 B1
A3 A4
A2 A1

Foyer A-C

11 12 13 14 15

to Foyer 2

Luncheons

Planten un Blomen

8 7

Level 2

Conference Area
Technical Sessions
Plenary Sessions

F
E
D

G1 G2

2

Foyer 2

Foyer D-G

Foyer 1

Wednesday...Friday

CCH · Congress Center Hamburg

Poster Session

The poster sessions organized by several of the workshops will take place in three central locations:

- room G1 and G2 on level 2   G1.A...G1.E, G2.A...G2.E
- hallway Foyer-AC on level 1   P.A, P.B, P.C, P.D
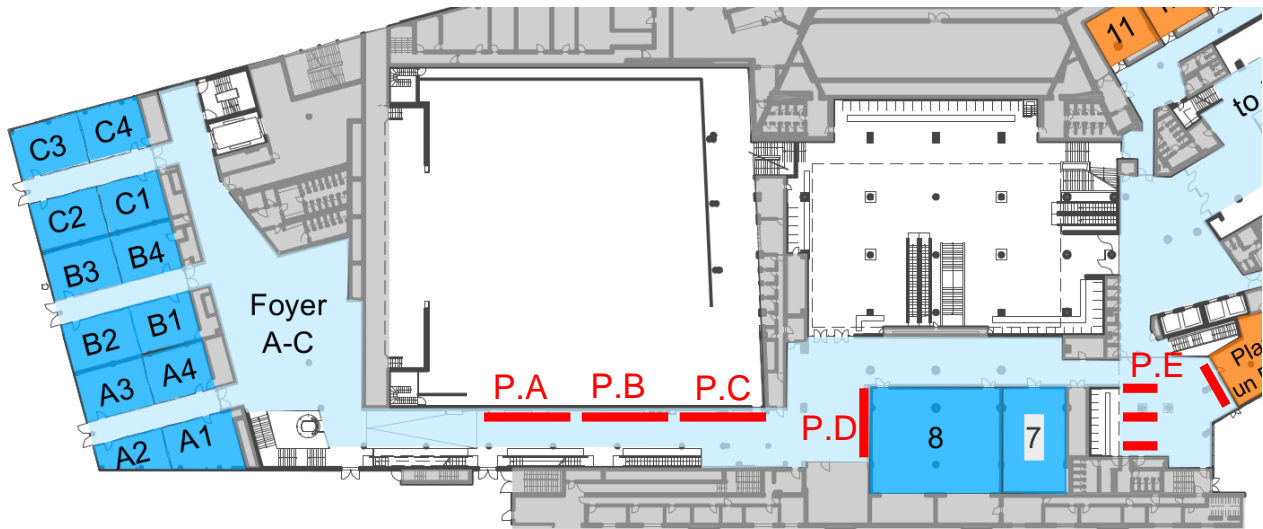- Foyer 7-8 on level 1   P.E

The detailed allocation of poster locations to workshops for room G1 and G2 will be posted on-site.

Note that the late-breaking posters session of the main conference will also take place in rooms G1/G2 on Thursday, October 1. Posters for the Monday workshops should be set-up on Monday morning, and can be left on show until Wednesday evening. Posters for the Friday workshops should be set-up on Friday morning, and must be taken down on Friday evening after the workshop closes.
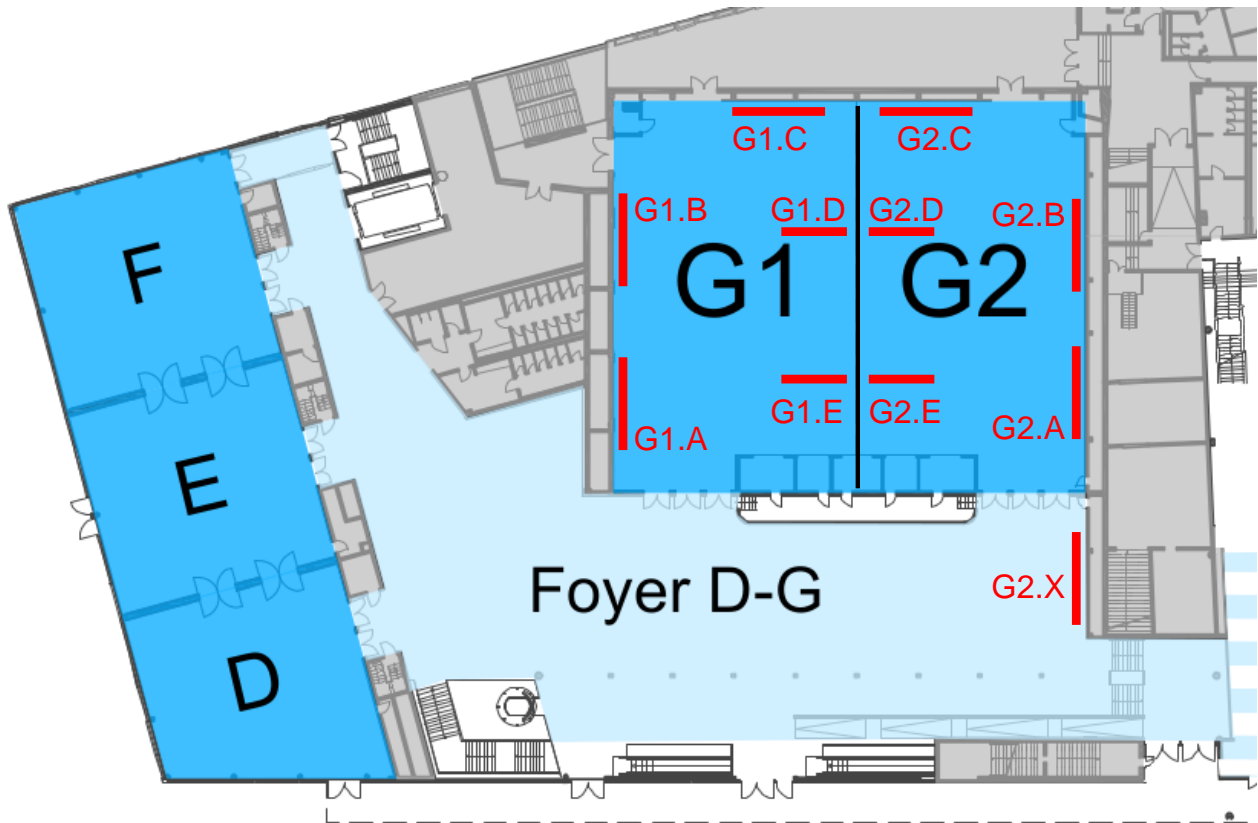
Please prepare your posters in size up to DIN A0 portrait orientation (841 mm $\times$ 1189 mm). Special glue (Tesa PowerStrips) will be provided by the conference; please do NOT use needles, pushpins, or standard adhesive tape to mount your posters, as this will damage the poster boards.

See the following sketches for the layout of poster boards, and check the description of your workshop for where to put the posters for your workshop:

Poster Session

Poster Boards at Level 1

Poster Boards at Level 2

Workshops Monday September 28, 2015

Code	Title, Organizers
MoWS-01	**Planning, Perception and Navigation for Intelligent Vehicles** C. Laugier, P. Martinet, U. Nunes, C. Stiller 08:30-18:00, Hall F
MoWS-02	**MiRoR: Miniaturised Robotic systems for holistic in-situ Repair and maintenance works in restrained and hazardous environments** M. Palomino, D. Axinte, S. Cobos-Guzmán 08:30-16:45, Hall A4, Posters G1
MoWS-03	**Semantic Policy and Action Representations (SPAR) for Autonomous Robots** Y. Yang, E. Aksoy, N. Dantam, T. Asfour 09:00-17:00, Hall C1, Posters G2
MoWS-04	**Designing & Evaluating Social Robots for Public Settings** C. Bevan, P. Bremner, D. Stanton Fraser, H. Gunes 08:30-17:30, Hall C2, Posters G2
MoWS-05	**Multimodal Semantics for Robotic Systems (MuSRobS)** M. A. Gutiérrez, R. E. Banch, S. Nair 08:30-18:00, Hall C3
MoWS-06	**Towards Standardized Experiments in HRI** N. Mirnig, P. Barattini, D. Chrysostomou, L. Dalgaard, M. E. Giannaccini, M. Giuliani, T. Haidegger, A. Tapus, G. S. Virk 08:30-18:00, Hall 12, Posters P.E
MoWS-07	**Unconventional computing for Bayesian inference** J. Lobo, J. F. Ferreira 08:30-18:00, Hall 15
MoWS-08	**From Plants and Animals to Robots: Movements, Sensing, and Control Two Worlds in Comparison** B. Mazzolai, L. Beccai 08:30-18:00, Hall B1
MoWS-09	**Domain-Specific Languages and models for ROBotic systems (DSLRob-15)** C. Schlegel, U. P. Schultz, S. Stinckwich, S. Wrede 08:30-18:00, Hall C4, Posters G2
MoWS-10	**Robotic co-workers: methods, challenges and industrial test cases** H. Ding, A. M. Zanchettin 08:45-18:00, Hall E
MoWS-11	**Learning Object Affordances: a fundamental step to allow prediction, planning and tool use?** L. Jamone, E. Ugur, A. Cangelosi, J. Santos-Victor 08:30-18:00, Hall D, Posters G1

Workshops Monday September 28, 2015

MoWS-12	**Bridging user needs to deployed applications of service robots** F. Bonsignorio, F. Cavallo, P. Dario 08:30-18:00, Hall 8
MoWS-13	**Real-time Cognitive Computing for Service Robots** J. Yao, N. Amato, J. Takamatsu, A. Mäder 08:30-18:20, Hall 14, Posters P.E
MoWS-14	**Hyper Bio Assembler for 3D Cellular Innovation** T. Arai, T. Fukuda, F. Arai, M. Kaneko, M. Yamato 08:30-18:00, Hall 11
MoWS-15	**Open forum on evaluation of results, replication of experiments and benchmarking in robotics research** F. Bonsignorio, E. Messina, A. P. Del Pobil 08:30-18:30, Hall 13
MoWS-16	**Robotic endoscopic capsules for gastrointestinal screening, diagnosis and therapy: achievements and future challenges** G. Ciuti, J. M. Dias 08:30-17:30, Hall B4, Posters G1
MoWS-17	**Towards truly human-like locomotion – The role of optimization, learning and motor primitives** K. Mombaur, D. Torricelli 08:30-18:00, Hall B3
MoWS-18	**Cognitive Mobility Assistance Robots:** **Scientific Advances and Perspectives** C. Tzafestas, P. Maragos, A. Peer, K. Hauer 08:30-18:00, Hall B2, Posters P.D
MoWSM-20	**Embodied-Brain Systems Science** J. Ota, E. Naito, S. Izumi, and T. Kondo 08:30-12:30, Hall A3
MoWSM-21	**Cooperative vehicles and robotic systems for industrial applications** L. Sabattini, C. Secchi, G. D. Tipaldi 08:30-12:30, Hall A1
MoWSM-22	**Robot Competitions: What Did We Learn?** J. Dias, K. Althoefer, P. Lima 08:30-12:30, Hall 7
MoWSA-20	**See and Touch: multimodal sensor-based robot control for HRI and soft manipulation** A. Cherubini, Y. Mezouar, D. Navarro-Alarcon, M. Prats, J. A. C.-Ramon 14:00-18:00, Hall A3, Posters P.A–P.C
MoWSA-21	**Spatial Reasoning and Interaction for Real-World Robotics** V. Rieser, D. Wollherr 14:00-18:00, Hall A1
MoWSA-22	**Aerial Open Source Robotics Workshop** M. Achtelik, L. Meier, B. Basso 14:00-18:00, Hall 7

Workshops Friday October 2, 2015

Code	Title, Organizers
FrWS-01	**Task Planning for Intelligent Robots in Service and Manufacturing** A. Gaschler, R. Petrick, E. Erdem 08:30-17:30, Hall 12
FrWS-02	**Navigation and Actuation of Flexible Instruments in Medical Applications (NAFIMA)** J. Burgner-Kahrs, A. Schlaefer 08:30-18:30, Hall C1, Posters G2
FrWS-03	**The Path to Success: Failures in Real Robots (FinE-R)** L. F. D'Haro, A. Niculescu, A. Vijayalingam 08:30-18:00, Hall 14
FrWS-04	**Transfer of Cognitive Robotics Research to Industrial Assembly and Service Robots** N. Krüger, A. Ude, T. Asfour, H. G. Petersen 08:30-16:45, Hall F
FrWS-05	**Physical Human-Robot Collaboration: Safety, Control, Learning and Applications** A. Gams, S. Calinon, F. Stulp 08:30-17:30, Hall E
FrWS-06	**Sensorimotor Contingencies for Robotics** R. Téllez, G. Alenyà, C. Angulo and K. O'Regan 08:30-16:45, Hall C4
FrWS-07	**Machine Learning in Planning and Control of Robot Motion** A. Faust, M. Gini, P. Kormushev, M. Morales, I. Palunko, A. Schoellig, L.Tapia 08:30-16:45, Hall 13, Posters P.E
FrWS-08	**The role of human sensorimotor control in surgical robotics** A. Jarc and I. Nisky 08:45-18:30, Hall C2, Posters G1
FrWS-09	**On-line decision-making in multi-robot coordination** J. Faigl, O. Simonin, F. Charpillet, G. A. Hollinger 09:00-18:00, Hall 11
FrWS-10	**Vision-based Control and Navigation of Small, Lightweight UAVs** G. Loianno, D. Scaramuzza, V. Kumar 08:30-16:45, Hall D, Posters G1
FrWS-11	**Agri-Food Robotics** G. Kootstra, Y. Edan, E. van Henten, M. Bergerman 09:00-17:30, Hall B3, Posters G2

Workshops Friday October 2, 2015

FrWS-12	**Perception and Planning for Legged Robot Locomotion in Challenging Domains** D. Kanoulas, I. Havoutis, M. Fallon, E. Yoshida 08:30-18:20, Hall B4, Posters G2
FrWS-13	**Bioinspired Underwater Robotics** C. Stefanini, F. Renda and T. Schmickl 08:30-17:30, Hall A4, Poseters G1
FrWS-14	**Alternative Sensing for Robot Perception** T. Peynot, S. Monteiro, T. Vidal-Calleja, P. Corke 08:30-17:30, Hall 8, Posters P.E
FrWS-15	**Safety for Human-Robot Interaction in Industrial Settings** K. Althoefer, I. Maurtua, H. Liu, H. Wurdemann, J. De Gea Fernández 08:30-17:30, Hall B1, Posters G1
FrWS-16	**New Frontiers and Applications for Soft Robotics** M. Cianchetti, H. Hauser, F. Iida, J. Rossiter, L. Margheri and C. Laschi 08:30-18:30, Hall C3, Posters P.A–P.C
FrWS-17	**Assistance and Service Robotics in a Human Environment** Y. Amirat, S. Mohammed, D. Daney, A. Spalanzani, N. Hagita, A. Chibani, R. Luo 08:30-17:45, Hall A2
FrWS-18	**Social Norms in Robotics and HRI** K. O. Arras, R. Triebel, A. J. Lilienthal, R. Alami, V. Evers 08:30-18:30, Hall B2
FrWS-19	**ISACS 2015 - 8th International Symposium on Attention in Cognitive Systems** L. Paletta, S. Frintrop, B. Mutlu 08:30-16:45, Hall 15, Posters P.E
FrWSM-20	**An Open-source Recipe for Teaching/Learning Robotics with a Simulator** R. Detry, P. Corke, M. Freese 08:30-12:30, Hall 7
FrWSM-21	**Advances in Biologically Inspired Brain-Like Cognition and Control for Learning Robots** F. Walter, F. Röhrbein, S. Ulbrich, R. Dillmann 08:30-12:30, Hall A3, Posters P.D
FrWSM-22	**Grounding robot autonomy:** **Emotional and social interaction in robot behaviour** R. Lowe, E. Barakova, E. Billing, J. Broekens 08:30-12:30, Hall A1, Posters G2
FrWSM-23	**Hands-on Tutorial on Robotics System Toolbox from MathWorks** Y. Zhang 08:30-12:30, Hall 16
FrWSM-24	**ECHORD++ Urban Robotics Applications** A. Sanfeliu, A. Grau, A. Puig-Pey 08:30-12:30, Hall 6 (note: room and time change, ex. 14:00-18:00)

FrWSA-21	**Micro-nano assembly reality check: Customer needs vs. research activities** S. Fatikow, M. Gauthier, T. Tiemerding 14:00-18:30, Hall A3
FrWSA-22	**How to Use ROS and Gazebo with the ROBOTIS OP2** K. Daun, J. Kim, R. Jung 14:00-18:00, Hall A1, Posters P.D
FrWS-25	**Robotics and Automation in Nuclear Facilities** W. R. Hamel, Y. Nakamura, R. Chatila, H. Asama 08:00-17:30, Hall Planten & Blomen