

September 6, 2016, Berlin

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Call for Papers

**1st International Workshop on Multimodal Interaction
 in Industrial Human-Machine Communication (MHMC)**

to be held in conjunction with ETFA 2016
 on September 6, 2016, Berlin

www.etfa2016.org

Workshop Organizers

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Aims and Objectives: Nowadays, industrial environments are full of sophisticated computer-controlled machines. In addition, recent developments in pervasive and ubiquitous computing provide a further support for advanced activity control. Even if the exploitation of these technologies is very often committed to specialized workers, who have been purposely trained to use complex equipments, easy and effective interaction is a key factor that can bring many benefits – from faster task completion to error prevention, cognitive load reduction and higher employee satisfaction. Multimodal interaction means using "non-conventional" input and/or output tools and modalities to communicate with a device. The main purpose of multimodal interfaces is to combine both multiple input modes — usually more "natural" than traditional input devices, such as touch, speech, hand gestures, head/body movements and eye gaze — and solutions in which different output modalities are used in a coordinated manner — such as visual displays (e.g. virtual and augmented reality), auditory cues (e.g. conversational agents) and haptic systems (e.g. force feedback controllers). Besides handling input fusion, multimodal interfaces can also handle output fission, in an essentially dynamic progress. Sophisticated multimodal interfaces can integrate complementary modalities to get the most out of the strengths of each mode, and overcome weaknesses. In addition, they can help handle different environmental situations and user (sensory/motor) abilities.

Although multimodal interaction is becoming more and more common in our everyday life, industrial applications are still rather few, in spite of their potential advantages. For example, a camera could allow a machine to be controlled through hand gesture commands, or the user might be monitored in order to detect potential dangerous behaviours. On the other side, an augmented or virtual reality system could be employed to provide an equipment operator with advanced visual cues, where auditory/olfactory displays might be used as an additional alerting mechanism in risky environments. Besides being used in real working situations to increase the amount and quality of available information, augmented/virtual reality interaction can be also used to implement an effective and safe training plan.

This workshop aims at gathering works presenting different forms of multimodal interaction in industrial processes, equipment and settings with a twofold purpose:

- Taking stock of the current state of multimodal systems for industrial applications.
- Being a showcase to demonstrate the potential of multimodal communication to those who have never considered its application in industrial settings.

Both proposals of novel applications and papers describing user studies are welcome. Topics of interest include, but are not limited to, the following:

- *Multimodal Input:* vision-based input, speech input, tangible interfaces, motion tracking sensors
- *Multimodal Output:* virtual reality, augmented reality, auditory displays, haptic (or tactile) interfaces, olfactory displays
- *Combination of "traditional" input and output modalities and multimodal solutions:* any form of integration of conventional input and output modalities (e.g. keyboard, mouse, buttons, standard LCD monitors, audiovisual content, etc.) with multimodal communication

Solicited Papers: Please consult the conference web page for more details.

Submission of Papers: The working language of the conference is English. Papers are limited to 8 double column pages in a font no smaller than 10-points.

Further Information: ETFA2016 Conference Secretariat: Tel.: +49 / 5261 94290-35; Fax.: +49 / 5261 94290-35; Email: etfa2016@iosb.fraunhofer.de

Paper Acceptance: Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses.

No-show Policy: The ETFA2016 Organizing Committee reserves the right to exclude a paper from distribution after the conference at IEEE Xplore if the paper is not presented at the conference.

Author's Schedule:

Deadline for submission of workshop contributions proposals:	May 20,, 2016
Notification of acceptance of workshop contributions:	July 10,, 2016
Deadline for submission of final workshop presentations and posters:	July 30, 2016

