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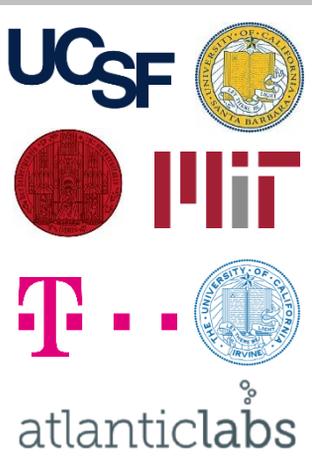
Funded by:



Participating Institutions:



Co-Operation Partners:



CeTI's vision is to enable humans to interact with co-operating CPS over intelligent wide-area communication networks to promote equitable access to remote work and learning environments for people of different genders, ages, cultural backgrounds, or physical limitations. Thus, going far beyond the current state of the art, CeTI democratizes the access to skills and expertise the same way as the current Internet has democratized the access to information.

Capitalising on outstanding expertise within TUD and associated institutions in the fields of communication, robotics, electrical engineering, computer science, psychology, neuroscience, and medicine, the innovations of CeTI are reflected in its structural and research objectives. CeTI conducts multidisciplinary research to

- (i) advance the understanding of the complexities and dynamics of human goal-directed perceptions and actions from the psychological and medical perspectives,
- (ii) develop novel sensor and actuator technologies that augment the human mind and body,
- (iii) develop fast, bendable, adaptive, and reconfigurable electronics,
- (iv) create intelligent communication networks that connect humans and CPS by continuously adapting and learning to provide low latency, as well as high levels of resilience and security,
- (v) design new haptic coding schemes



to cope with the deluge of information from massive numbers of body sensors,

- (vi) design online learning mechanisms as well as interface solutions for machines and humans to predict and augment each other's actions, and
- (vii) evaluate the above solutions as well as to engage the general public about the societal and ethical changes and new opportunities the new technologies will bring by means of use cases in medicine (context-aware robotic assistance systems in medical environments), industry (co-working industrial space), and the Internet of Skills (education and skill acquisition for the general public).

Vodafone Chair Contribution:

To meet the demand of quasi-real-time interaction of humans with CPS, low latency and determinism are of crucial importance. Based on this requirements, the Vodafone chair contributes extremely efficient and flexible physical layer (PHY), medium access control (MAC), link adaptation, and innovative radio resource management (RRM) approaches. Moreover, the Vodafone chair focuses on the joint optimization of communication and control approaches for a massive number of interacting CPS.

