

257367 IoT@Work

IoT@Work will develop the technologies required to enable Internet of Things (IoT)-based applications and processes in the manufacturing domain. The IoT architecture will allow production processes to adapt quickly and easily to new business models and processes. Process and industry automation, however, have strong demands for reliable communication and security guarantees, which the IoT architecture has to incorporate from the start. Today, deployment and commissioning of complex production processes or Internet-enabled applications interacting with production systems still require a time consuming and error-prone manual network configuration process. This is due to the need to maintain a high level of determinism, safety, and security of the production process itself and avoiding both safety-critical failures and costly production interruptions. Furthermore, the traditional concept of a 'system's boundary' does not scale in scenarios where repurposed production systems have to fulfil new goals and adapt aspects like connectivity, dependability, security and privacy. IoT@Work will deliver tools and runtime mechanisms based on IoT technologies to significantly simplify commissioning, operating, and maintaining complex production processes. The contribution of this project will be focused on using self-configuration mechanisms, enabling what we call secure Plug&Work IoT. We want to contribute to the design ideas of the IoT architecture in order to dynamically and securely adapt networks and resources to better fit to "change", where this change could be due to infrastructure change, failures, or even process adaptations.