**INDUSTRY 4.0**

**Industry 4.0** is a name given to the current trend of [automation](https://en.m.wikipedia.org/wiki/Automation) and data exchange in [manufacturing](https://en.m.wikipedia.org/wiki/Manufacturing" \o "Manufacturing)[technologies](https://en.m.wikipedia.org/wiki/Technologie). It includes [cyber-physical systems](https://en.m.wikipedia.org/wiki/Cyber-physical_system), the [Internet of things](https://en.m.wikipedia.org/wiki/Internet_of_things), [cloud computing](https://en.m.wikipedia.org/wiki/Cloud_computing)[[1]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-Definition-I4.0-1)[[2]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-2)[[3]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-3)[[4]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-4) and [cognitive computing](https://en.m.wikipedia.org/wiki/Cognitive_computing). Industry 4.0 is commonly referred to as the [fourth industrial revolution](https://en.m.wikipedia.org/wiki/Fourth_Industrial_Revolution).[[5]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-5)

Industry 4.0 fosters what has been called a "smart factory". Within modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real-time both internally and across organizational services offered and used by participants of the [value chain](https://en.m.wikipedia.org/wiki/Value_chain).[[](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-Definition-I4.0-1)

The characteristics given for the German government's Industry 4.0 strategy are: the strong customization of products under the conditions of highly flexible (mass-) production.[[12]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-12) The required automation technology is improved by the introduction of methods of self-optimization, self-configuration,[[13]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-13) self-diagnosis, cognition and intelligent support of workers in their increasingly complex work.[[14]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-14) The largest project in Industry 4.0 as of July 2013 is the [BMBF](https://en.m.wikipedia.org/wiki/Federal_Ministry_of_Education_and_Research_(Germany)) leading-edge cluster "Intelligent Technical Systems Ostwestfalen-Lippe (it's OWL)". Another major project is the BMBF project RES-COM,[[15]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-15) as well as the Cluster of Excellence "Integrative Production Technology for High-Wage Countries".[[16]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-16) In 2015, the [European Commission](https://en.m.wikipedia.org/wiki/European_Commission)started the international [Horizon 2020](https://en.m.wikipedia.org/wiki/Horizon_2020) research project CREMA[[17]](https://en.m.wikipedia.org/wiki/Industry_4.0#cite_note-17) (Providing Cloud-based Rapid Elastic Manufacturing based on the [XaaS](https://en.m.wikipedia.org/wiki/XaaS" \o "XaaS) and Cloud model) as a major initiative to foster the Industry 4.0 topic.