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Fusion is our Future: Readiness of the Fusion Technology and the 4th Industrial Revolution

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The time and cost of further increasing the overall readiness level of fusion energy, which requires testing materials under extreme environment, data collection, analysis and new designs, can be significantly reduced with the advent of the fourth industrial revolution. The fourth industrial revolution is on its way. Known as Industry 4.0, it represents the current trend to use automation and data exchange technologies that include cyber-physical systems, the Internet of things, cloud computing and cognitive computing. These technologies are rapidly being developed to perform industry activities. Components of future fusion reactors are expected to be designed and manufactured by using advanced simulation technologies and advanced manufacturing methods. The costs will be further reduced as there will be increased harmonisation of codes and standards. IAEA have already taken steps to ensure that the design rules are harmonised before the technology is commercialised. In case of the fission technology there was commercialisation before harmonisation but for fusion technology it will be harmonisation before commercialisation.

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