

ITER is a next generation fusion tokamak designed “to demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes”. With a lifetime cost of ~\$10 billion it is intended that ITER will be a single step between the current set of fusion experiments and DEMO, a fusion power plant designed to demonstrate safe and reliable, commercial electricity production. Construction began in 2006 in Cadarache, France and the first plasma is scheduled for 2016 followed by an exploitation phase lasting ~20 years. ITER is a joint venture of 7 Participant Teams (EU and Switzerland), Japan, the People’s Republic of China, India, the Republic of Korea, Russia and USA) each of whom will have a role in carrying out the necessary technical tasks involved in ITER’s construction and commissioning.

The CODAC (COntrol, DAta Access and COmmunications) architecture is based on distributed systems connected over a set of complementary networks. Each Plant or CODAC System can communicate over one or more networks for different purposes depending on the required data bandwidth and latency.

In addition to conventional networks, a set of special purpose high performance networks, which can reside on the same physical network if performance tolerates this, will be provided by ITER for the integration of the various plant systems.

These networks are:

- Time Communication Network (TCN) used to synchronize time among all systems.
- Synchronous Data-bus Network (SDN) used to communicate data requiring higher response levels than the PON.
- Event Distribution Network (EDN) used to communicate data requiring higher response levels than SDN.

The current assumptions on the performances target and on the planning will be presented for discussion.

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