

Former tokamak CASTOR becomes remotely controllable GOLEM at the Czech Technical University in Prague

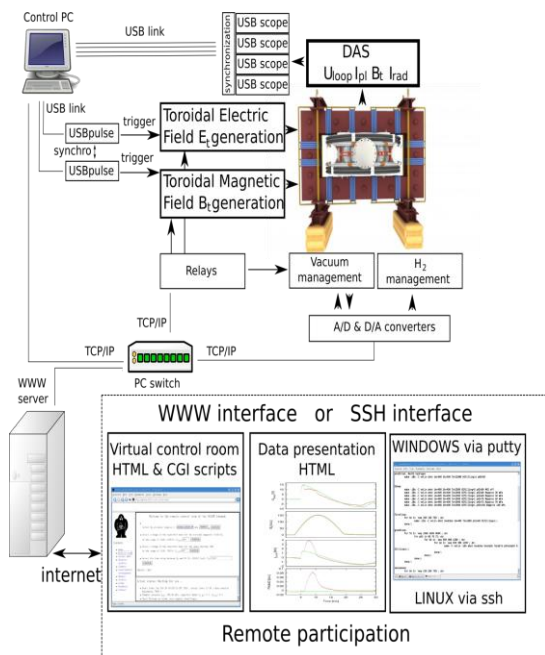
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The CASTOR tokamak, which has been operated for 30 years at the IPP Prague was moved to the Czech Technical University in Prague and became an educational device for domestic as well as for foreign students, via remote participation/handling. The reinstalled tokamak ($R = 0.4$ m, $a = 0.085$ m), now baptized as GOLEM, operates currently at modest range of parameters, $B_t < 0.5$ T, $I_p < 8$ kA, pulse length < 10 ms, and with a limited set of diagnostics. This facility will be offered to the FUSENET (the 7th FWP European Fusion Education Network).

A unique feature of this facility is a possibility of a complete remote handling operation through the internet access. The setup of the experiment, sketched in the figure, describes remote control of the toroidal magnetic field and plasma current generation, vacuum system and gas handling operation and the DAS system via TCP/IP and USB controlled A/D, D/A converters and bank of relays, which is PC controlled and connected via web server to the internet. Remote control is possible either in the online mode via WWW or SSH interface or in the offline mode with the batch processing code.



The remote handling with several foreign universities in Hungary, Belgium and Costa Rica and a summer school in Poland has been successfully performed. Further upgrade of GOLEM is envisaged in a near future (increase of B_t , I_p , and the discharge duration and an increase the number of plasma diagnostics).

In this contribution, we will present details of the experimental arrangement of the required hardware/software and selected experimental results achieved via remote handling.

References: [1] Tokamak GOLEM at the Czech Technical Univ. <http://golem.fjfi.cvut.cz>, [online].