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Overview of the EUROfusion Medium Size Tokamak program PIERO MARTIN, Consorzio RFX, Padova, Italy, MARC BEURSKENS, Max-Planck-Institut fuer Plasmaphysik, Greifswald, Germany, STEFANO CODA, Ecole Polytechnique Federale de Lausanne, Centre de Recherches en Physique des Plasmas, Switzerland, THOMAS EICH, Max-Planck-Institut fuer Plasmaphysik, Garching, Germany, HENDRIK MEYER, CCFE, Culham Science Centre, Abingdon, UK, THE EUROFUSION MST1 TEAM[1] — As a result of the new organization of the European fusion programme, now under the umbrella of the EUROfusion Consortium, the MST (Medium Size Tokamaks) task force is in charge of executing the European science programme in the ASDEX Upgrade, TCV and MAST-U tokamaks. This paper will present an overview of the main results obtained in the 2014 campaign–where only ASDEX upgrade was operating–and the preliminary achievements of the recently started 2015/16 campaign, where also TCV will contribute. The main subjects of the experimental campaigns are (i) the development of scenarios relevant for the ITER Q=10 goal, in an all metal wall device (ii) the understanding of ELM mitigation/suppression with pellets and resonant magnetic perturbations, and in particular the effect of density versus collisionality, (iii) the understanding and optimization of methods for disruption mitigation or avoidance and runaway electrons control and (iv) the exploration of ITER and DEMO relevant scenarios with high normalized separatrix power flux, P_{sep}/R, (P_{sep} is the power through the separatrix, R the major radius) and tolerable target heat loads. The overview of the future programs in MST will be given.

[1]http://www.euro-fusionscipub.org/mst1

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