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ITER IC H&CD system: physics requirements and performance predictions P. LAMALLE, B. BEAUMONT, F. KAZARIAN, A. LOARTE, R. MITTEAU, C. SCHÜLLER, ITER Organization, CS 90 046, 13067 Saint-Paul-Lez-Durance, France, A. MUKHERJEE, ITER India, GIDC, Gandhinagar, India, R. GOULDING, F. JAEGER, D. RASMUSSEN, D. SWAIN, US ITER Project Office, ORNL, Oak Ridge, USA, R. SARTORI, Fusion for Energy, Barcelona, Spain, M. NIGHTINGALE, EURATOM/UKAEA Fusion Association, Abingdon, U.K., E. LERCHE, A. LYSSOIVAN, A. MESSIAEN, D. VAN EESTER, R. WEYNANTS, ERM-KMS, Association EURATOM-Belgian State, Brussels, Belgium, R. MAGGIORA, D. MILANESIO, Politecnico di Torino, Torino, Italy, L. COLAS, R. DUMONT, Euratom-CEA Association, CEA-Cadarache, France — The ITER Ion Cyclotron Heating and Current Drive (IC H&CD) system will deliver 20MW of radio frequency power to the plasma in quasi continuous operation during the different phases of the experimental programme. It must have a high availability and reliably couple to ELMy H-Mode plasmas. It has the additional functionality of performing wall conditioning (ICWC) at powers up to ∼3MW. The paper will 1) discuss the physics and design requirements on the system, 2) review the main scenarios planned for H&CD and ICWC, 3) describe the main features of the current design, 4) discuss performance predictions based on recent modelling, and 5) present the key measures under implementation to reduce risks on performance.

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