Tokamak plasmas represent a complex system, in which several coupled physical processes interact continuously. These physical processes are controlled via external actuators (heating, fueling systems, magnetic field coils) and measured with diagnostics. Therefore a realistic description of a whole tokamak experiment must include not only a detailed modelling of all physical process (e.g. heating, equilibrium, transport) but also account for their complex interactions and technical aspects of the tokamak subsystems. This is the ambition of modern Integrated Modelling.

In this talk, we present the CRONOS suite of codes, which has been developed during the past decade and is one of the major Integrated Modelling codes exploited today. We present an overview of the various physical processes addressed by the CRONOS code, the mathematical methods applied for solving them and examples of applications of the CRONOS code in support to the preparation and analysis of tokamak experiments. In particular, we will address predictive simulations in preparation of ITER scenarios. Finally, perspectives for Integrated Modelling and links to the European Integrated Modelling Task Force are presented.