



## **The Prodiguer Messaging Platform**

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CONVERGENCE is a French multi-partner national project designed to gather HPC and informatics expertise to innovate in the context of running French climate models with differing grids and at differing resolutions. Efficient and reliable execution of these models and the management and dissemination of model output (data and meta-data) are just some of the complexities that CONVERGENCE aims to resolve.

The Institut Pierre Simon Laplace (IPSL) is responsible for running climate simulations upon a set of heterogeneous HPC environments within France. With heterogeneity comes added complexity in terms of simulation instrumentation and control. Obtaining a global perspective upon the state of all simulations running upon all HPC environments has hitherto been problematic.

In this presentation we detail how, within the context of CONVERGENCE, the implementation of the Prodiguer messaging platform resolves complexity and permits the development of real-time applications such as:

1. a simulation monitoring dashboard;
2. a simulation metrics visualizer;
3. an automated simulation runtime notifier;
4. an automated output data & meta-data publishing pipeline;

The Prodiguer messaging platform leverages a widely used open source message broker software called RabbitMQ. RabbitMQ itself implements the Advanced Message Queue Protocol (AMQP). Hence it will be demonstrated that the Prodiguer messaging platform is built upon both open source and open standards.