

Abstract Preview

BIRF: How to Improve Software Projects Efficiency and Control using Business Intelligence

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Software projects are difficult to manage. In complex environments, like the space programmes, this takes more importance, because they are large projects, involving complex subcontracting structures, and producing critical software. For those reasons, organisations impose software engineering methodologies and standards, which are usually supported by tools to improve the level of visibility and automation. However, those tools are dedicated to specific areas such as requirements, change management, coding, or testing. In addition, project progress reporting is normally based on periodical generation of manual documentation, without following a homogeneous approach for all projects. This situation drives to a proliferation of data about different aspects of the projects, which are difficult to collect and to evaluate from a global point of view in the organisation, and which requires significant routine manual work.

BIRF system has been developed for ESA-ESOC with the objective of rationalising the reporting interfaces with the contractors, collecting data about different aspects of the project, and evaluating it to provide an integrated view of the status of the projects in the organisation at different levels of responsibility, using key performance indicators (KPIs) and reports.



BIRF is a web application using Business Intelligence, which is a mature field in the IT market providing tools for gathering and analysing data to support decision making. It is extensively applied to enterprise business information and massive data analysis, such as financials, sales, and marketing, but not so much in the context of software projects.

The system has been deployed in ESOC and it is being applied to real projects, providing the following benefits:

- Improved control over software projects, formalising interfaces with contractors and providing an accurate evaluation of the status of processes and products for proactive management and better decision making.
- Improved productivity, automating time consuming routine tasks for data collection and reporting, as well as providing a quick access to all information related to the projects for all key actors, from technical officers to high managers.
- Contribution to improve organisational processes, through the standardisation of best practices and the support to continuous improvement based on measures and evaluation of objectives.

A quick return of investment (ROI) is expected due to the cost savings related to the effective decision making, and the reduction of manual and repetitive work.

This solution has also potential application in order contexts, including:

- Large organisations externalising projects or services, to improve control over subcontractors
- Software companies, optimising their resources, and facilitating the adoption of mature processes (e.g. CMMi)
- Other areas of space missions, where it is necessary to evaluate the performance of a complex environment, such as non-software projects, operational systems, etc.