Fit for a PRINCE
The Network of European Centres on Project Reviews
The Project Review Integrated Network of Centres (PRINCE) is a simple agreement between space centres to ‘share’ experts to complement the expertise of their own project review teams.

Introduction
PRINCE is an initiative of the Network of Centres in charge of project reviews: these are currently the British National Space Centre (BNSC, UK), Centre National d’Etudes Spatiales (CNES, F), Centre for the Development of Industrial Technology (CDTI, E), Deutsches Zentrum für Luft- und Raumfahrt eV (DLR, D), ESA and Eumetsat. Since it began in 2000, PRINCE has provided every type of space project review with experts from a wide range of technical disciplines, ranging from system/mission engineering to specialists in very specific technical fields. The diversity of the various centres guarantees that the experience missing from a review team will be found. PRINCE began with a preparatory phase, followed by a qualification phase in which the rules and procedures of the initiative were defined. The operational phase began after approval by the ESA Council in October 2003.
PRINCE has proved to work very efficiently and to be extremely convenient for the users. Project managers and chairs of review boards use PRINCE because it:

– improves the quality of the reviews. The experts have solid backgrounds based on their involvements in a wide spectrum of projects;
– supplies technical and managerial expertise to complement and extend that of the internal review team;
– provides the review with new and independent points of view on the challenges faced by the project;
– can lead to significant reductions in project risk, and hence cost-savings, through the early detection of potential problems.

Also, participating in project reviews at other centres allows the selected experts to:

– experience projects with technical challenges new to them;
– exchange knowledge with staff of other centres and to establish useful professional relations;
– discover novel solutions;
– learn new ways of organising project reviews that could improve those of their organisations.

PRINCE ensures efficient cross-participation of specialists because their selection does not impose additional constraints on the requesting project. Confidentiality is guaranteed by written agreement, and the external reviewers are cost-free to the projects.

Experience in using PRINCE

During its 2-year qualification phase, PRINCE worked smoothly and effectively. Feedback from chairs of review boards, project managers and reviewers was extremely positive. The process has proved to be flexible enough to deal with urgent requests and for the continuous involvement of specific reviewers. Feedback comments included:

– the fresh insights brought by truly independent reviewers were helpful to projects;
– 80% believed that PRINCE is likely to improve pan-European cooperation;
– 75% of chairs of review boards believed that PRINCE is likely to improve the quality of Europe's space programme;
– 95% of participants were willing to use PRINCE in future reviews.

The total number of reviews opened to external participants in the first 4 years was 40; 85 reviewers were exchanged, with no exchange of funds.

PRINCE has been used in a wide range of projects, including launchers (Ariane-5), meteorological satellites (MetOp), scientific probes (Huygens), scientific satellite ground segment (GERB), remote-sensing satellites (SPOT-5), balloon-mounted payloads (IMaX), synthetic aperture radar instruments (TerraSAR-X), air-breathing propulsion systems (ASSC2) and optical-imaging small satellites (Topsat).

In each of these widely-differing projects, PRINCE was able to provide a review member with the expertise requested by the project.

The individual expertise includes satellite operations, systems engineering, security requirements, satellite thermal and structural engineering, propulsion, attitude and orbit control, onboard data handling, ionospheric modelling, cryogenics, aerothermodynamic modelling, optical and radar instrumentation and mission control software.
How to Request Support

The process has three simple steps. Each centre has a ‘correspondent’ who, as an expert in project reviews, coordinates the PRINCE process.

First, a project manager contacts the PRINCE correspondent of his centre (see ‘Points of Contact’). Together, they define the expertise profile required for the review. A specific request is issued for each required external reviewer. Each request contains a description of the project under review, the required skills and the review dates. The correspondent distributes this official request to the correspondents of all other participating centres.

Second, after receiving a request, the correspondents search for appropriate specialists/reviewers and send suitable proposals to the requesting centre correspondent.

Third, the final selection is made by the project manager and the review board chair. In principle, they do not have to justify their decision. The correspondent sends positive and/or negative responses to the proposing centres. Identification of the review authority and the point of contact is specified only in the case of a positive response. The selected reviewers are informed by their correspondents about their roles and duties in the review. In particular, reviewers act *ad personam* and sign a confidentiality agreement that secures any technical or programmatic information accessed during the review. At this point, an external reviewer behaves like any other member of the review team and any further contacts are made directly between the team leader and the reviewers.

The mandate of external reviewers expires at the end of the review and they must return all the review documentation to the project.

Frequently-asked questions

Does PRINCE impose a specific review procedure?
No. It is assumed that all the participating centres apply standard or tailored ECSS methodology to the conduct of the reviews. PRINCE does not add any specific feature to the nominal review procedure.

Does PRINCE impose the use of a specific language?
No. The requesting centre specifies the language used in the review.

Does PRINCE ensure confidentiality?
Yes. All external reviewers sign a non-disclosure agreement.

Does PRINCE add to the cost of a review?
No. Involving external participants from PRINCE in a review has no cost to the project under review. However, each centre bears the costs of its own staff sent as external reviewers. PRINCE balances the exchanges of external participants between participating centres, thus avoiding an exchange of funds.

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“The experts from ESA, CNES, CDTI and BNSC added essential experience to the review team, which turned out to be very helpful for the project. The continuity of personnel provided for subsequent reviews was highly appreciated.”

Rolf Warminghaus, TerraSAR-X Project Manager

“The involvement of a PRINCE external reviewer contributed substantially to the credibility of the review.”

Bill Levet, TogaSat Project Manager