

CONTROL SYSTEMS OUTSOURCING PERSPECTIVES

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Summary

During the last years, the SL division has gained some experience with the outsourcing of control systems. Among other motivations, this approach was seen as a way to achieve higher quality in terms of documentation, delivery time and conformance to specification. At the same time, in-house projects have adopted a similar approach to quality. These projects provide a good basis for a meaningful comparison between in-house and out-house developments. The presentation was aimed at reviewing the relative advantages of both approaches and identifying key issues to be considered before adopting an outsourcing approach.

The nature of the project is the first aspect to consider. Control systems projects can be classified according to the following criteria: level of innovation, specificity, level of integration and criticality. A matrix combining the different criteria can be used to assess the difficulty to outsource.

Potential advantages and drawbacks for both in-house and out-house approaches exist. The outsourcing approach has allowed CERN to obtain complete and reliable products delivered on time and well documented. An important effort of specification and project follow-up was, however, required from CERN representatives. Similar results have been achieved with the in-house projects thanks to the adoption of rather formal software engineering and project management practices. This approach and the associated discipline may be difficult to generalise for in-house development due to cultural rigidity.

The risks differ in the two approaches. Risks related to cost and time are transferred to the contractor when the outsourcing solution is chosen. New risks related to the contractual relationship are however introduced. The time delay required for the tendering process, the cost of knowledge transfer and the constraints imposed by CERN purchasing rules shall also be taken into account.

The presentation concluded that in both cases, the development of a control system is a project and it should be managed as such. Clear objectives must be defined and software engineering and project management discipline is required to achieve predictable results. The choice of the approach should be based on an evaluation of the risks, the available resources and in-house competence, the time and budget constraints and the nature of the project. Mixed approaches are also possible. In short, it is not a binary choice and above all else; it should not be forgotten that in any case it is a CERN project.