

	Programme CE28	
		Edition 2014

Projet	
<b>Acronyme</b>	SOPRANO
<b>Titre</b>	Nouveau prouveur automatique pour l'analyse de programmes

Coordinateur du projet			
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**RETOUR AU COORDINATEUR**

## 1. Introduction

The project proposes to develop an open-source platform combining different resolution methods issued from both SMT (Satisfiability Modulo Theory) and CP (Constraints Propagation) approaches. The project results will be beneficial from both the scientific and the technological point of view. Industrial partners will provide regular feedback and evaluation of the methods and tools developed in the project.

## 2. Pertinence des éventuelles évolutions par rapport à la pré-proposition

We note the addition of a permanent researcher originated from a partner already present in the pre-proposal. He brings his expertise in automatic proof of programs manipulating floating-point numbers which can be relevant to the proposal.

## 3. Excellence scientifique et/ou caractère innovant pour la recherche technologique

The objectives of the project are well described and the complexity of the addressed problem is clearly stated. The fusion of SAT/SMT and CP solving techniques represents a great challenge, and deserves further focused research efforts, due to its potential to provide novel decision and optimization procedures taking the best out of both SMT and CP.

While the design and development part of the project are well presented and seems technically feasible, the validation part seems less convincing.

No explanation on how the results provided by the project may be used in industry (if they will be applicable to all programming languages, for what types of verification tools, if constraints arise due to certain types of applications, which are the open-source components that are expected) is explicitly available in the proposal.

## 4. Qualité de la construction du projet et de sa faisabilité

The composition of the consortium has high quality partners with well-justified roles both from academia and industry. This constitutes a strength of the proposal. However the limited experience of the PI may be a risk if the size and importance of the project are considered. The project seems technically feasible and, given the number of partners, the funding request seems appropriate.

## **5. Impact global du projet**

The project has high potential for advancing current state-of-the-art constraint solving technology.

The quality of the researchers from academia makes the project solidly grounded in fundamental formal science.

However the industrial application to verification of digital infrastructures is less clear despite the presence of academic and industrial partners within the consortium.

## **6. Synthèse**

Strength:

- The composition of the consortium has high quality partners
- The project is solidly grounded in fundamental formal science.

weakness

- Impact of the project in terms of basic research risks to be limited by software publishers who do not necessarily have the same expectations (especially in terms of return on investment) than other members of the consortium.
- The industrial impact may be weak if the solutions finally obtained are not actually released due to preemption by the software publishers.
- The validation part is less convincing