

Task Forces in the ETERNALS Coordination Action

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Abstract. We describe the scope, organization, and expected outcomes of the Task Forces of the ETERNALS Coordination Action. The goal of the Task Forces is to provide structure and focus to the activities pursued in ETERNALS while retaining essential openness to bottom-up initiatives.

1 Introduction

The ETERNALS Coordination Action (CA) is about the need to make software and knowledge-based systems capable of adapting to changes in user requirements and application domains. It aims to coordinate research in this key area comprising several dimensions including time, location, and security conditions all of which reflect the diversity of the context where systems operate.

The main instrument in ETERNALS to structure this rather wide field of interest into focused and manageable units is through the establishment of *Task Forces* (TFs). In this brief note we motivate and explain the adopted Task Force structure (Sect. 2), describe their organization (Sect. 3), and list expected outcomes (Sect. 4).

2 The ETERNALS Task Forces

The ETERNALS Task Forces are meant to give a coarse-grained structure to the ETERNALS theme of adaptability. As the aim of the CA is to encourage collaboration among the Integrated Projects (IPs) represented in ETERNALS we sought a structure that runs *cross-cutting* to the interests of the IPs. This excluded, for example, software-based vs. knowledge-based, software vs. middleware, or formal vs. informal as structuring criteria. Instead, we chose the dimensions of spatial vs. temporal adaptability as well as of planned vs. autonomous evolvability. We believe that this classification makes the Task Forces attractive for external stakeholders to join while providing the necessary focus and encouraging collaboration:

TF1. *Diversity awareness and management:* this can be seen as the “spatial” dimension of adaptability where we intend to gather expertise in mechanisms that model/handle diversity in IT-systems.

- TF2.** *Time awareness and management:* this is one aspect of the “temporal” dimension of adaptability: that of planned evolvability of dynamic systems. We also put a special emphasis on security.
- TF3.** *Self-adaptation and evolution by learning:* here we collect expertise in learning/control techniques for autonomous evolution of systems.

A detailed description of the scope of each TF is found in *Task Force Descriptions* within the ETERNALS session of ISOLA.

3 Organization of ETERNALS Task Forces

The objective of a task force is to provide a concrete platform where stakeholders with a common interest in the development of “eternal” systems can meet, discuss, exchange ideas, take stock, suggest new initiatives, etc. With stakeholders we mean physical persons with a research or application interest in the area of each task force. The members of each task force are recruited from the four Integrated Projects of the “Forever Yours” cluster, from the institutions present in the ETERNALS CA, from the international research community at large, and from companies with an interest in the theme of ETERNALS. Typically, a TF could comprise a core of 6–10 members who actively drive its agenda, plus 10–15 members-at-large who contribute to discussions and the various outcomes (Sect. 4).

Membership is informal, free, and does not lead to any obligation for the TF member or his/her employer. Each TF has a leader who coordinates the work within a TF. The TF leader also maintains a list of TF members which is visible at the ETERNALS web portal <https://www.eternals.eu/>.

Specifically, each TF provides: (i) a fertile environment for facilitating the emergence of bottom-up research initiatives from the TF members themselves or from any group of stakeholders; (ii) a coarse-grained classification, where the above initiatives can be conceptually located; (iii) a pool of experts for discussing, developing and judging the emerging initiatives; and (iv) a platform to bootstrap communities and ideas that will constitute the initial seed for promoting bottom-up initiatives.

The classification of the work of the CA into task forces does not constrain in any way the type of the emerging initiatives as any new topic can be located according to the *nearest neighbor principle*. When an external (to the TFs) group of stakeholders proposes ideas (e.g., for collaboration or for discussing new topics), these will be considered by the most relevant TF.

To make the description of the TFs reasonably concrete, we defined a number of interesting *initial* topics along with possible collaborations between the already known stakeholders. These topics as well as the internal structure and a list of initial stakeholders are described separately in each *Task Force Description* within the ETERNALS session of ISOLA 2010.

4 Envisaged Outcomes of ETERNALS Task Forces

We list possible concrete outcomes of each TF. Except where explicitly noted, this list is neither inclusive nor mandatory. It is up to the initiative of the TF leader and the TF members to decide what they think is important. *The concrete work of the TFs is driven bottom-up.* Obviously, multiple activities and initiatives can be pursued simultaneously.

1. A survey of the state-of-art of research in the area of the TF. The aim is publication in a suitable journal. Such a survey is mandatory and is an ETERNALS Deliverable with due date January 2011.
2. Identification of research topics where the different IPs represented in ETERNALS can collaborate. Ideally, this would result in a decision of the Steering Committees of the involved IPs to collaborate on certain tasks.
3. TFs can be forums in which new project proposals are developed. Importantly, such initiatives are not limited to members of the IPs represented in ETERNALS or to the European area.
4. Organization of annual TF meetings as part of the plenary ETERNALS meetings in Spring 2011 and Spring 2012. The format, purpose, and composition of these meetings are completely open and can be adapted to the agenda of each TF.
5. Written summaries of the results of the Task Force after each annual ETERNALS workshop. The content of these is determined by what each TF decides to work on. It can be anything including (but not limited to) research papers, road maps, white papers, survey papers, inputs to standardizing committees, etc.

5 Conclusion

ETERNALS Task Forces provide an open and very flexible organizational framework for bottom-up initiatives within trustworthy, highly adaptable, and long-lived IT-systems. They structure the research within the ETERNALS theme along the dimensions of spatial/temporal adaptability and of planned/autonomous evolvability.