Title of the Proposed TFG

Agent-Oriented Software Engineering

Scope and Aims of the TFG Activity

The scope of this TFG is to work on agent-based methodologies to construct MAS applications. Up to date, several works focused on the analysis and design phases; actually a great number of methodologies are dealing with them: ADELFE, GAIA, INGENIAS, MASE, MESSAGE, PASSI or TROPOS to list just a few of them. This TFG focuses on both the methodological aspect of designing a MAS and the related technological support provided by CAME/CASE CASE tools. We aim to answer some questions such as: which is the right direction for the future in AOSE? How to reuse works already done about methodologies? Which kind of CASE do we need to design MAS? How can they interact with other development tools? How can we select/evaluate/validate a methodology?...

Aims

During the activity of this forum the proposed aims are:

- Discussing about the future of AOSE and identifying the most relevant directions that have to be explored in order to support the growth of this field towards its maturity.
- Defining the set of core building blocks required by an agent-oriented methodology.
- Designing the MAS meta-models linked with existing methodologies in order to propose to designers (or begin to think about) a design methodology including templates and patterns for different types of agent and types of agent systems as recommended in the roadmap of AgentLink II (page 35).
- Being linked with the standardization work of the FIPA. One of its aims is to define methodology fragments in order to build a methodology process in a flexible manner.
- Expressing the different existing methodologies with the same formalism to highlight the differences and the similarities and promote the reuse of some parts of these methodologies to build a new one.
- Identify and express guidelines for the construction of future design methodologies that could strengthen the adoption of patterns and increase the level of reusability.
- Propose some guidelines to be followed for the construction of CASE tools so that they could more easily interact with each other and support several different methodologies.
- Finding one or several benchmarks to test the different methodologies.

The authors of this proposal are also in close contact with the authors of the proposal on Networked Agents TFG and plan to work closely together if selected to ensure good interchange between the groups (e.g. exchange of requirements, if possible sequential meetings, etc.).

TFG Category

Research area.

TFG Chair

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TFC Promoters

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Related Activity, Connections & Perspectives of TFG Chair & Promoters

M. Cossentino, the chair of this proposed TFG is a researcher of the Italian National Research Council and he is currently researching on flexible approaches to the composition of agent-oriented design methodologies and he is author of several papers in the field. This research activity is coordinated with the FIPA Methodology Technical Committee that he is chairing.

Many of the other promoters are members of the same FIPA TC and actively participate in advancing the state of the art of EU nations on related topics. It is worth to remark that several companies operating in the field of (agent-based) software development had demonstrated a concrete interest in this plan, some are among the promoters while some others will look at its results while the participation to this TFG remains out of their scope.

Assessment of Potential Interest

- Users of the potential produced standards.
- Industrials: Whitestein, TNI-Valiosys, Engineering Ingegneria Informatica
- Members of the FIPA TC Methodology.
- Institutions teams that have developed a methodology and who are not promoters.
- Software engineering people and among them specifically SPEM designers.

"Outline plan" of TFG activities

Before:

- Ask potentially interested people to give a first draft of the meta-model underlying their methodology.
- The chair of the TFG will ask people who want to present their meta-model during the meeting to send a “paper” on the target meta-model. But the “simple” participation to the meeting is free.

During:

- Discussion on further activities of this TFG, large scope scenarios will also be evaluated
- Presentation of the different meta-models and discussion about them.
- Discussion about methodology benchmark and comparison

After:

- A report of the meeting concerning the different meta-models and the discussion will be produced. This report will be a first draft of a position paper about this TFG perspective.

Intended Format of the TFG Meeting at AL3-TF1

Duration:

1 day.

Activities:

MORNING

First part – General Presentations

- Presentation of the objectives and of the agenda (15 minutes)
- Participants presentation (3 minutes by participants)

Second part – Existing Meta-models

- Presentations of the different meta-models prepared by participants and published on the website (10 minutes per each)
- Discussion to build one unified meta-model; this will be the beginning of a work which will be continued after the meeting.

AFTERNOON

First Part– Benchmarks (1.30 hour: Discussion + Decision)

- Work to identify one or several representative case studies, benchmarks, significant parameters, quality indexes of design methodologies

Second Part – Towards the Unification of Methodologies (1 hour: Presentation + Discussion)

- Presentation of the FIPA Methodology TC approach and of the objectives
- Discussion

The aim of this part is preparing the field for a broader activity (for instance in next meetings). A portion of this work will be done after this meeting

Third part – Conclusion (1.30 hour)

- Summary by co-organizers of the work
- Short concluding statements (5 minutes) by all participants pointing out their opinions on the meeting. Do they want to continue to work on these topics? Have they ideas for a next meeting?

Joint session with PROMAS and NETAGENTS TFGs

Discussion with other TFGs people to identify the most relevant directions that we can explore together in order to support the growth of our interest field towards its maturity.
Date and time of this session will be defined together with other TFGs

Procedures to Produce the Deliverables after AL3-TF1

The final result of the AL3-TF1 meeting will be a report composed as described below. It will be written off-line soon after the meeting and reviewed with the contribution of all the participants.
The outline of the document will be:

1) MAS Meta-models
   a) One subsection for each presented meta-model
   b) The outcome of the meeting about an unifying MAS meta-model
2) Methodologies Benchmarking
   a) Identified methods, parameters and other relevant issues
   b) Experiences on MAS methodologies
   c) Result of the discussion
3) Towards an Unification of Design Methodologies
   a) Result of the discussion
4) Suggestions for Further Meetings