D6.1 Contractual reports according to grant agreement including progress report, management report, cost statements

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Project acronym:	ActionPlanT
Project title:	European Forum for ICT in Factories of the Future
Funding Scheme:	Coordination and Support Action: Coordinating (CSA-CA)

Date of latest version of Annex I against which the assessment will be made: 2010-04-29

Periodic report:	1st Periodic Report
Period covered:	From M01 to M12 (01. June 2010 - 31. May 2011)

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Declaration by the scientific representative of the project coordinator

I, as scientific representative of the coordinator of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period
- The project (tick as appropriate)[1]:
    - o has fully achieved its objectives and technical goals for the period
    - o has achieved most of its objectives and technical goals for the period with relatively minor deviations
    - o has failed to achieve critical objectives and/or is not at all on schedule.
- The public Website, if applicable:
    - o is up to date
    - o is not up to date
- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 3.6) and if applicable with the certificate on financial statement.

All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of scientific representative of the Coordinator: .....

Date: ...../ ...../ .....

Signature of scientific representative of the Coordinator: .....

[1] either of these boxes is ticked, the report should reflect these and any remedial actions taken.

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1. Publishable Summary

Project Summary

ICT plays a multifaceted role in all major European industrial sectors and its contribution to the manufacturing sector has become paramount over the last few years. Quite undeniably, ICT will become increasingly intertwined with Factories of the Future and will be seen developing efficient business processes through dynamically evolving business models.

For Europe to hold on to its global leadership and excellence in manufacturing, it is imperative that improvements be made at both technological as well as awareness-creation levels. This can be done only through a thorough analysis which will help understand the fundamental driving factors of the future manufacturing landscape within Europe - both in terms of quantifiable factors such as technology as well as of other more qualitative factors such as politics, environment, and societal needs.

The overarching objective of ActionPlanT is to illustrate how recent development in the ICT could mitigate some of the most crucial pain points of European manufacturing. The “ICT for Manufacturing” research that ActionPlanT addresses would facilitate development of software for not only shop floor processes but on a wider scale connect enterprises to other enterprises and customers, thereby making manufacturing more user friendly and accessible to masses.

There are two distinctive threads of work in ActionPlanT - the first deals with the development of an "ICT-enabled" vision for "Manufacturing 2.0" which will then lead to a development of a strategy roadmap outlining how the vision could be realised through implementation of tangible research topics and within achievable schedules. The vision and roadmap would serve as input to the next Work Programme (CSF/Horizon 2020) of the European Commission. The ActionPlanT Vision is due for delivery in autumn 2011 while the Roadmap will be published at the end of the project in May 2012. The second thread of ActionPlanT explores the concept of "Industrial Learning" which investigates and documents how the awareness of ICT in manufacturing can be increased amongst industry and academic practitioners through well validated knowledge delivery mechanisms and industrial learning pilot events.

Description of Work Performed

Workpackages 1, 2, and 3 contributed to the first thread of work in ActionPlanT. The project started off in June 2010 with an analysis of existing roadmaps, strategy documents, and vision papers in the domain of manufacturing, ICT for manufacturing, as well as pure ICT. An inventory of over 35 of these documents, covering over 600 research topics, were analysis in the first six months of the project from which 22 were shortlisted. Importantly, several "Research Topic Clusters" were also derived from the ActionPlanT inventory and an ontological inventory browsing tool called the ActionPlanT Knowledge Map was developed. In parallel, a methodology called STEEP Analysis, for understanding the influence of external factors on the update of "ICT for Manufacturing" developments within Europe, was developed from well understood techniques in the business & corporate communities. The STEEP Analysis methodology was extensively validated through the First ActionPlanT Workshop in Dresden, Germany at the premises of SAP Research where around 40 people comprising internal consortium members as well as invited international experts from industry and academia participated. Further to this in the second half of the first year, future services and business scope for new ICT paradigms in manufacturing were studied and linked to the STEEP Analysis results. This resulted in the development of a detailed first draft of the ActionPlanT vision document at the end of Month 12. The roadmapping work of the project also started in the second half of first year with the First ActionPlanT Workshop.

More than 80 manufacturing challenges, identified and derived from the inventory analysis, were validated with experts and a preliminary list of around 30 Research Topics were developed. These topics were clustered and gap analysis performed based on the preliminary research clusters proposed in the ActionPlanT Vision document draft. Based on the topic gaps, two further interim roadmapping workshops were conducted in Month 11 of the Workshop in Brussels and Cernobbio respectively to collect more than 20 ICT focused research topics. A draft document detailing the list of research topics collected so far and their linking to the research clusters proposed in the ActionPlanT Vision document draft was submitted to the commission in Month 12. Currently there is scope for improvement and work is underway, to make the vision document concise and suitable for consumption by policy makers and European parliamentarians. Substantial work is also needed to validate, prioritize, and schedule the research topics collected through different ActionPlanT workshops.

Workpackage 4 covered the second thread of the project on Industrial Learning. Work started with the adaptation of an Industrial Learning Model first proposed in EPFL for ActionPlanT. Several dimensions of knowledge assessment through skills, attitude, competence etc. were added to the original model. Some aspects of the model were tested at the first Industrial Learning Pilot Event (ILPE) co-located with the First ActionPlanT workshop in Dresden, Germany. Furthermore, several knowledge delivery mechanisms such as teaching factory, serious games, and eLearning were also identified as prospective candidates for trial in subsequent ILPEs. After the first ILPE was conducted, focus was shifted to disseminate and attract recognised industrial learning institutions and associations across Europe. External observers were identified and invited for subsequent ILPEs from such organizations as Fraunhofer, CETIM, ALBA, and VDMA. This is scope for improvement in the Industrial Learning part of the project. Shortcomings were observed in making this approach more integrated with the vision & roadmapping work of ActionPlanT. Furthermore, Industrial Learning currently misses a plan for reaching out to a wider audience across Europe and delivering results (model, delivery content, and/or delivery mechanism) which would be sustainable after the conclusion of the project.

The project managed to create awareness amongst major technology platforms through invited experts as well as presentation of ideas/scope at EU organized events and association meetings. It created and maintains a database of invited experts, their affiliations, association/multiplier organization they represent as well as their field of expertise. The project also observed tight integration with EFFRA (European Factories of the Future Research Association) through registered consortium partners and keeps its research clusters/areas synchronized with current developments within EFFRA. Regarding communication channels, the project started off with only a public website. Later, a community website where workshop experts can contribute towards refining research topics via a wiki was also created. Access has been limited to workshop participants in the first year of the project but plans are in place for opening up the access of the community website to a wider European audience. Furthermore, the project communicated its scope and future actions through poster presentation at some major events. Only recently, the project has started to show social media presence (LinkedIn and Twitter) and there is scope for improvement in being more active socially and reaching out to a wider audience with project results. These activities will gather pace once the publicly distributable vision document is delivered in Month 15 and the validation process of roadmapping research topic is started.

Main Results Achieved so Far

The notable results achieved in the first year of the project are:

1. Extensive analysis of over 35 roadmaps covering over 600 research topics and deriving topic clusters and list of manufacturing challenges from them. These formed the basis for First ActionPlanT workshop brainstorming exercise.
2. Release of an ontological inventory browsing tool called ActionPlanT knowledge map which assists researchers in navigating through literature. This contribution resulted in a publication at the eChallenges 2011 conference to be held in October 2011 in Florence, Italy.
3. Development of a validated STEEP Analysis methodology which helped in formulation of the ActionPlanT vision and resulted in a publication at the eChallenges 2011 conference to be held in October 2011 in Florence, Italy.
4. A draft ActionPlanT Vision document which reports on megatrends, current pain points, and enablers for future "ICT for Manufacturing" research. This document is undergoing restructuring in order to prepare a shorter and more comprehensible public document for parliamentarians and policy makers.
5. Collection, documentation, and analysis of more than 50 research topics collected through three roadmapping workshops. Currently work is in progress to form a taxonomy and validate the research topics with experts.
6. Trial of two knowledge delivery mechanisms at two ActionPlanT Workshops based on which different knowledge assessment metrics were calculated. Both these sessions were engaging and participants as well as observers gave good feedback.
7. Organisation of three successful workshops with 45 representatives of EU and international manufacturing ICT community to obtain expert input in the STEEP/Vision, roadmapping and Industrial Learning exercises. A fourth major workshop (Paris) took place in M13 with participation of 22 leading EU experts in ICT for manufacturing.
8. Although more work needs to be done, the project has successfully reached out to major ETPs and associations within Europe. Major industries within Europe have acknowledge the role ActionPlanT is playing and have supported this initiative by participating in project workshops and brainstorming with consortium members at different other important events.

Expected Final Results and Potential Impact

The four expected final results and their potential impacts are the following:

1. A concise "ActionPlanT Vision Document" at the end of M15 which will deliver a vision statement on the importance of ICT in manufacturing within Europe.

   Impact: The vision document will convince the decision makers of the need for research and investment in ICT for Manufacturing topics within Europe.
2. A detailed "ActionPlanT Roadmap" at the end of M23 which will illustrate the different ICT for manufacturing research areas, validated research topics, and a schedule for starting research in those research topics.
   Impact: The roadmap will serve as a basis for preparing the workprogramme of the next EU framework programme and help the commission in drafting calls & research objectives.

3. A validated Industrial Learning model and a well-documented plan for uptake of knowledge delivery mechanisms (with potential benefits) by learning associations after the conclusion of project in M24.

   Impact: The model and plan will help create awareness of ICT for manufacturing education within Europe. It will demonstrate how novel knowledge delivery mechanisms can help European workers as well as students in adopting new tools/methodologies for modern manufacturing faster. It will also open an avenue for revenue generation by independent learning associations such as CETIM, ALBA, and VDMA.

4. An ActionPlanT community of industrial and academic experts representing ETPS and European associations.

   Impact: ActionPlanT will a platform for bringing together industrial as well as academic experts from the ICT world as well as the manufacturing world. This community will help in the validation process of ActionPlanT roadmap and also act as multipliers for disseminating project results to a wider European audience.

   ActionPlanT Public website: http://www.actionplant-project.eu/

   ActionPlanT Community website: http://actionplant-community.org/

2. Project Objectives for the Period

The salient objectives of ActionPlanT are the following (from Annex I):

- Increasing awareness and knowledge in Europe on what and how ICT can make manufacturing more efficient and agile in a cross-industrial context.
- Providing best practice examples and increase the understanding on how ICT facilitated investments can improve productivity and sustainability in business processes.
- Offering the means to better understand the use of ICT in order to have an impact on the individual manufacturing, service and business processes as well as the overall performance.
- Creating a more coherent ICT for FoF community of experts
- Developing and publish an ICT for Manufacturing 2.0 vision for the period beyond FP7 with the help of the community of experts. This document will be used as a basis to further define relevant future research in this area.
- Fostering a cross-sector and cross-industry dialogue, information exchange, and industrial learning through well proven concepts such as the *teaching factory*.

Recommendations Concerning Period Under Review (M01 - M06)

The following lists the general recommendations from the interim review conducted in M06 of the project. Work package & deliverable specific comments are addressed in individual work packages.

Recommendation#1: The period under review is the first six months of the project and the review was planned and executed in accordance to the grant agreement. In general, the work done by the project in this period is accepted, and based on the information provided for review it can be stated that the resources used are acceptable, and that the project can continue. Within WP1 it is recommended that a full list of the roadmaps initially considered is set up. The approach of WP4 needs to be re-evaluated to assess, or explain, how the proposed approach will lead to a substantive change in terms of the transfer of relevant knowledge to current and future workers. Within WP5 the mechanisms for encouraging the multiplier organisations to participate in the dissemination process need to be developed and explained.

Response: The inventory of roadmaps, used as a basis for building up the ActionPlanT Knowledge Map and the different research cluster areas have been uploaded to the Documents > Workshop Reports of the public website.

Regarding WP4, we acknowledge that the Industrial Learning approach needs to be modified and focus needs to be given on making the knowledge delivery mechanism sustainable after the conclusion of ActionPlanT. In view of this observation, two experienced trainers were invited to the first ILPE in Dresden on February 3rd, 2011. Their feedbacks on the Teaching Factory exercise were taken into account and reported in the improved version of Deliverable 4.2. Furthermore, future steps taken towards involving more professional training organizations in two other ILPEs this year have been described in the improved version of Deliverable 4.1.

Many multipliers have the mission to inform their members and have dedicated channels to do this. (Already during the 1st workshop's organisation phase, some multipliers did forward ActionPlanT messages to their networks in order to delegate experts to the workshop). Personal connections with platforms have been established, directly or through

intermediaries. The dissemination by multipliers will be triggered or requested by ActionPlanT through those contacts. European Technology Platforms and related groupings will for instance be requested to forward the first newsletter (or html mail with link to pdf version).

Recommendation#2: The project partners should ensure that only the best stakeholders acting in ICT for manufacturing will contribute their qualified input. The community website should be carefully designed to incorporate all relevant knowledge assets gathered in the knowledge map, as well as additional ones that may be progressively inserted throughout the project's lifetime. An advanced documentation structure and access mechanisms should be produced quickly to correspond to those needs. Web-based communication tools and services should be used to gauge information on best practices and industrial needs across Europe.

Response: The Project Management of ActionPlanT and WP5 work in conjunction to ensure that the input to vision building and roadmapping is provided by knowledgeable and recognized experts in the field of ICT and manufacturing. The contact management spreadsheet, which is a living document, is scrutinised on a regular basis and experts' contributions to knowledge café and brainstorming session are carefully monitored during workshops in order to ensure that only experts who are adept in both the subject matter and roadmapping process are considered as "ActionPlanT experts". Furthermore, we are open to recommendations and referrals from the ActionPlanT reviewers and project officer on the inclusion of qualified experts (which is demonstrated by the fact that we included two experts in the first workshop on the recommendation of Mr. Franz-Josef Stewing and other experts during interim roadmapping workshops).

Web 2.0 tools such as Wiki and CRM have already been set up as part of the community exercise. ActionPlanT experts have confirmed their participation in prioritising roadmap topics through the community website Wiki which is currently being enriched with the response templates received from the knowledge café of the workshop. Access control mechanisms have been enforced in the community website – authentication and authorisation mechanisms have been implemented so that only invited experts have access to the website and the content respectively.

Recommendation#3: Knowledge "harvesting" workshops and other events should be attractive to busy industrial professionals in terms of content and duration.

Response: We have taken this recommendation into account by disassociating roadmapping workshops from ILPE events in their scope and target audience. The major workshops (such as the First ActionPlanT Workshop in Dresden and the Second Workshop in Paris) had one and a half days of Roadmapping activities so that busy industrial professionals could come to the venue on the first day and leave on the second. The two interim workshops had duration of one full day and were located in Brussels (so that experts could travel conveniently) and Cernobbio (so that we could tap the local expert pool attending the World Manufacturing Forum). Content wise we distributed agenda, background material, scope and expectation to experts in advance and have always experienced a good participation rate.

Recommendation#4: The project's "impact creation" should be clarified early on, and all workpackages and activities aligned accordingly in order to maximize it. Communication channels, such as newsletters, flyers, publications, conferences, workshops websites should be used to disseminate information on the project's activities and thus to create a 'market' for the project's final deliverables.

Response: The first newsletter will be issued after one year (after M12). It will explain the context of the ActionPlanT project, the operation of ActionPlanT and the information that is available through the public and community website. The context will explained the impact of ActionPlanT and hence its value.

Context

- The Factories of the Future Public-Private Partnership (FoF PPP), its operation so far through the Ad-hoc Industrial Advisory Group and the FoF multiannual roadmap.
- The role of DG INFSO in the FoF PPP and the areas addressed by DG INFSO in the current FoF PPP.
- The relation to Manufuture and EFFRA, the private association in the process of formally representing the private industrial partner in the PPP.
- EFFRA being in the process of preparing the overall roadmap for FoF beyond 2013, that will be the basis for developing the call topics for the FoF PPP under Horizon 2020. The Roadmap will be the basis for agreeing with the European Commission the research content of the FoF PPP under Horizon 2020.
- The impact of ActionPlanT is being assured by strongly interfacing ActionPlanT with the EFFRA Industrial Research Advisory Group, which is developing the EFFRA Roadmap, combined with wide public consolation of stakeholders in a coordinated way.

Recommendation#5: The metrics (including indicators) for impact measurement in the training module should be specified and further elaborated. The goals should be realigned and the impact of events should be adequately defined, not through a simple counting of attendee numbers. Knowledge generated in the road mapping process should be effectively be transformed into learning content.

Response: The metrics for impact measurement in the training module refer to the four building blocks of the learning process: attitude, knowledge, skills and competence. For each building block, the metrics help measuring in a quantified way the achievement of the respective goal, which has been identified in the ILPEs' Questionnaire. The metrics aim to capture the "contribution" of the ILPEs in improving the attitude, knowledge, skills and competence of the trainees with respect to the introduced learning module. Thus, they measure the "difference" in the levels of attitude, knowledge, skills and competence, before and after the ILPE as perceived by the trainees.

The trainees' responses in the Questionnaire of each ILPE will be processed appropriately, so as to assign specific values to the metrics. Mean values will be extracted on the basis of all trainees inputs. Standard techniques, i.e. normalization, weights assignment, multi-criteria weighted rating etc. will be used to get overall impact assessment values.

Recommendation#6: The project's website is rudimentary. It needs to be populated quickly with available up-to-date content on relevant ICT research. Web traffic of the site, e.g. downloading of material, links from other websites (web visibility) and uploading of searches (community website) should be taken care of effectively and professionally.

Response: The project website has been updated with the latest version of Manufacturing Business Web, Objectives, Twitter Feed as well as a LinkedIn community has been started. The documents section of the website is also functional now - all public deliverables, workshop reports, and important reference document can now be downloaded from there. The contents of the website will be updated once the public and approved version of the ActionPlanT vision document is published. The access to community website until now is by invitation only and after the first periodic review, decision was taken to open the access to a wider community through the channels established by WP5.

Recommendation#7: The issue of security, particularly related to sensitive or critical data on public networks as well as control command transmissions, is not currently addressed by ActionPlant. While this is clearly not a major theme of the project it should figure in the

assessments of technology. Similarly, the issue of system complexity versus organisational resilience should be considered by the project.

Response: Although we have some security topics for manufacturing, detailed analysis of research areas in steganography, privacy, and trust (including role based access control and delegation) in the context of networked factories and enterprises are not yet well developed. An agreement was reached amongst some of the ActionPlanT experts to further investigate security and privacy challenges of subcontracted manufacturing, product-centric services/product-service systems, and distributed supply chains. We are in touch with IT companies specializing in security products such as Gemalto and gathering topics in this area. Topics for managing system complexity through CPS, systems of systems, and non-hierarchical systems were captured in the Second ActionPlanT workshop in Paris.

Recommendation#8: ActionPlanT utilises a variety of approaches to dissemination of project results to the interested parties across Europe, but activities need to be planned to also reach the national target groups of the project. Material, target audience and dissemination channels are not yet adequately identified and employed within the project (see recommendations).

Response: National target groups will be reached through geographically oriented multiplier organisations. A quite significant network is composed by National and Regional Manufuture Technology Platforms (NRTP), with a target audience that is very attached to Factories of the Future PPP. Agoria is regularly participating at the Manufuture NRTP meetings. Actually the chairman of these meetings participated in the Dresden workshop as an expert.

Recommendation#9: It is not so clear that international connections are either well established or being pursued, even though such links could be useful at least in terms of monitoring.

Response: International connections were and are progressively established (NIST participation at Dresden Workshop, invitation of international players in the context of the World Manufacturing Forum 2011 in Cernobbio)

3. Work Progress and Achievements during the Period

3.1. Overview of the progress of the work

In Year 1 of ActionPlanT, the main deliverables were completed in Work Packages 1 and 2; while progress was made in Work Packages 3, 4, and 5. The initial months in Year 1 was used for analysing the ActionPlanT inventory which consisted of over 35 roadmaps, vision papers, and strategy documents covering over 600 research topics. An Ontological Knowledge Browsing tool was also developed to browse and correlate research topics in the inventory. WP1 delivered this knowledge map tool as well as the inventory analysis report which was used as a basis for vision building and roadmapping work carried out in WP2 and WP3 respectively. WP1 also investigated the use of the TRL metric for validating research topics gathered through the roadmapping process.

WP2 used the topic cluster suggested by WP1 as a basis and developed the methodology to perform STEEP analysis. An extensive list of future scenarios were developed which were validated at the First ActionPlanT workshop in Dresden. Over 400 responses were collected from experts at this workshop and the weighted scores were compared to draw up a list of five comprehensive ambitions for European manufacturing enterprises. These then were used to develop the ActionPlanT vision of a manufacturing business web in Deliverable D2.2. While formulating the vision, care was taken to perform analysis in both bottom-up manner (starting with manufacturing challenges in present day manufacturing enterprises) as well as top-down (analysing ICT advances in the world of application and social media development and investigating how they could be used for manufacturing). Currently work is in progress to validate the taxonomy and finalize the three pillars of the Manufacturing Business Web.

For WP3, the main activity was centred around the collection of Research Topics through three workshops. The inventory and manufacturing challenges were presented to the experts at the First ActionPlanT workshop in Dresden. Based on these, many brainstorming sessions were conduction and some 30 Research Topics were collected from experts. However, during analysis of these Research Topics, it was realized that more ICT focused topics were required. Because of this two other interim roadmapping workshops were conducted in Brussels and Cernobbio in M12. Some deviations from the planning were observed in WP3 - first, scheduling and prioritization of topics (Task 3.1) was not started. Also, a concrete validation plan for the Research Topics (Task 3.2) is also missing at this stage. It is currently envisioned that Year 2 of ActionPlanT will make progress in these two areas of roadmapping and no further brainstorming workshops would be done.

In WP4, an Industrial Learning Model was developed based on an existing proposal used in EPFL. Some aspects of the model was tested and tried out the First ActionPlanT workshop in Dresden. Also in the first year, a set of Industrial Learning training modules were proposed for trial at the different Industrial Learning Pilot Events (ILPEs). Furthermore, a questionnaire for assessment of each ILPE was developed and first tried out the First Workshop in Dresden. During the interim review of the project, some comments were received regarding the novelty and sustainability of the model proposed in WP4. Also the deliverables were reworked based on the feedback from the interim review. Also, based on the feedback from the interim review, several professional industrial learning institutions were onboarded during the ILPE and their feedback incorporated in the learning events.

In WP5, focus on creating awareness making among major multipliers and the identification of individual experts was carried out. The communication media and channels were put in place for soliciting feedback on invitation-only basis. A tight interface with the overall Factories of the Future roadmapping activity was established. During three ActionPlanT workshops, 25% of experts who have attended our three workshops belonged to the

MANUFUTURE ETP. Also, tight integration with the work of EFFRA was maintained. The project and work was showcased in several important events during the year including ICT 2010, ICT proposer's day - also papers were accepted to the eChallenges 2011 workshop to be held in Florence, Italy in October 2011.

Regarding online communication channels, the public website was significantly reworked and social media links (LinkedIn, Twitter) were incorporated. Also, some partner videos featuring latest advances in ICT for Manufacturing were featured. The public website also features a document section where all public deliverables, workshop reports, and strategic reference documents are archived so that it is easier for experts to access and understand the work done in the project. A separate community website featuring a wiki was created due to legal issues of incorporating a wiki within the public website. The current Research Topics are listed in the community website. In the first year the wiki access was restricted to invited experts but with the validation phase starting in Year 2, it will be opened up to a greater community of experts for a wider consultation process.

3.2. Description of Work Progress for each work package

Work package no.	WP 1	**Plan-Start:**	M01	**Plan-End:**	M09
Lead Participant	IPK	**Actual-Start:**	M01	**Actual-End:**	M09
Work package title	State of the Art Analysis				
Activity Type	Coordination activities				
Participant involved	IPK, FTK, POLIMI				

Work package summary of progress towards objectives

The objective of the WP1 “State of the Art Analyses” is to capture and evaluate the inventory in the context of Factories of the Future in order to provide an initial input to the vision for ICT –enabled manufacturing (WP2) and the roadmap activities (WP3).n Furthermore, the development of a Knowledge Map (Task 1.2) and development of a TRL-methodology for ICT for Manufacturing (Task 1.3) were planned within this work package.

All of the three tasks planed with this work package were completed and the deliverables were submitted. The deliverables D1.2 and D1.3 are pending approval by the reviewers.

Recommendations from Interim Review:

a. Within WP1 it is recommended that a full list of the roadmaps initially considered is set up.
Response: The spreadsheet containing list of roadmaps initially considered has been uploaded in the documents section of the public website.

b. Moving forward there is some concern that the use of technology readiness levels (TRLs) may need some refinement. In an area as broad as manufacturing it is not clear that a given technology will have the same TRL in all potential application areas. The option of subdividing various industries within manufacturing into groupings with similar characteristics should be assessed.
Response: In the reporting period between M06-M12, the work on TRL was advanced as part of Task 1.3. Internal workshops were conducted to discuss the use of TRL in the validation process of the roadmap. Furthermore, existing TRL approaches in the literature were studied and a focused set of metrics for evaluating maturity of “ICT for Manufacturing” topics were proposed. The work was reported as part of Deliverable D1.3 and will be further refilled between M15 – M18 (roadmap validation phase) of the project.

c. D1.2 (not yet delivered) should also show clearly how the knowledge map will advance the state-of-the-art.
Response: D1.2 was submitted with some delay as stated in the progress description of Task 1.2

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
See resource clarification on task level.	20	15.56
	Plan (total)	**Actual (total)**
	20	15.56

Task no.	Task 1.1	**Plan-Start:**	M01	**Plan-End:**	M06
Lead Participant	IPK	**Actual-Start:**	M01	**Actual-End:**	M06
Task title	Capturing and Evaluating the Inventory				
Activity Type	Coordination activities				

Participant involved	IPK, FTK, POLIMI

Progress of work

In the scope of Task (T1.1) the activities are directed towards identifying and analysing the relevant roadmaps, strategic research actions and initiatives focused on new developments in Manufacturing and ICT. Furthermore, the information from the inventory was mapped to the relevance of the thematic areas of the "Strategic Multi-Annual Roadmap" with the objective to identify future trends for manufacturing research objectives, areas and topics, as well as major development trends in the ICT enabling technologies.

Considering those objectives, we have performed an analysis of the manufacturing challenges and ICT-enabling technologies mapped to the domains of smart, virtual and digital factories, as well as the domains of sustainable and high-precision manufacturing. These results were used as a basis for initiating work in the vision and roadmapping workpackages.

The findings of these analyses were presented on the 1st Review meeting in Brussels on 14th of December 2010. The deliverable D1.1 associated with this task, submitted with a minor delay, has been accepted.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
IPK (M01-M03): Definition of the scope of the Inventory (1.4PM) IPK (M04-M06): The main sources of information have been identified and qualified; Main criteria for clustering of information context of the Factory of the Future was finalised. Clustering and State-of-the-Art analyses have been performed. (1.87PM) FTK (M01-M03): Contribution to D1.1 (1PM) FTK (M04-M06): Contribution to D1.1 (2PM) POLIMI (M01-M03): SOTA (Reading and screening roadmaps, searching for other material) (0.4PM) POLIMI (M04-M06): POLIMI supported this task with reviews of Roadmaps and definition of list of research topics useful for ActionPlanT. Furthermore, POLIMI was involved in the evaluation process and contributed to the deliverable. (0.58PM)	7	7.25
	Plan (total)	**Actual (total)**
	7	7.25

Task no.	Task 1.2	**Plan-Start:**	M01	**Plan-End:**	M04
Lead Participant	IPK	**Actual-Start:**	M01	**Actual-End:**	M04
Task title	Knowledge Map for Supporting Roadmapping Activities				
Activity Type	Coordination activities				
Participant involved	IPK, FTK, POLIMI				

Progress of work

This task has the objective to develop and maintain a Knowledge Map in order to capture and correlate the information gathered during the State-of-the-Art analyses encompassing stakeholders, research topics and research objectives information. During this task, we developed an interactive ontology-based knowledge map which the links information from different concepts and domains defined in the inventory analyses using semantic relations. The knowledge map facilitates editing, querying and navigating of the roadmap information.

The meta model and the prototype was developed and presented in the time planed with the project plan. Furthermore, the Knowledge Map was presented on the 1. Review Meeting in Brussels.

The deliverable was submitted with delay, as the final meta model has been modified according to the results of the state-of-the-art analyses WP1.1. Furthermore, the deliverable was modified

considering the comments and the suggestions from the reviewers. The late submission of the deliverable does not negatively impact the progress of other work packages within ActionPlanT.		
Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
IPK (M01-M03): Development of the first knowledge map prototype (2PM) IPK (M04-M06): Development of the first knowledge map prototype, updating knowledge map according to feedback from partners, incorporate data into knowledge map. (0.5PM) FTK (M01-M03): Contribution to Technology Readiness (0.75PM) FTK (M04-M06): Contribution to KM (0.5PM)	4	3.75
	Plan (total)	**Actual (total)**
	4	3.75

Task no.	Task 1.3	**Plan-Start:**	M03	**Plan-End:**	M09
Lead Participant	POLIMI	**Actual-Start:**	M03	**Actual-End:**	M09
Task title	Technology Readiness and Impact Analysis				
Activity Type					
Participant involved	IPK, FTK, POLIMI				
Progress of work					
The ActionPlanT team decided to use the Technology Readiness Level Methodology to support its roadmapping activities, to assess the maturity of a defined research topic within the roadmap. As the previous versions of the TRL do not match the requirements of ActionPlanT's roadmapping exercise, it was decided to develop a specific adaptation of the TRL focusing on "**ICT for Manufacturing**", considering the specific aspects of the development of ICT technologies used into the manufacturing enterprises. This was done through internal workshops on TRL development and resulted in the deliverable D1.3 Technology Readiness & Impact Analysis. The developed TRL will be used in future workshops as part of the validation exercise which will be carried out by Task 3.2. Deviations according resources are not observed in Task 1.3. The deliverable D1.3 was submitted 1 month later than planned. This was done due to the reason to process the development workshop after the results of the Dresden workshop are ready in order gain advantage from knowing how the future Research Topics will look like and therefore to more precisely develop the maturity model. The delay has no consequence on other workpackages since it will be used earliest in month 16.					
Resources allocated / Plan vs. Actual		**Plan (period)**		**Actual (period)**	
IPK (M07-M09): The adaptation of the TRL Methodology for ICT for Manufacturing has been performed. Working on the implementation concept. (1.73PM) FTK (M07-M09): Contribution to D13 : contribution on Software TRL, definition of ICT for Manufacturing TRL and example of the application of the TRL (1.5PM) FTK (M04-M06): Contribution to Technology readiness definitions (0.5PM) POLIMI (M07-M09): SOTA on TRL, Workshop on elaboration of ActionPlanT TRL, Writing deliverable chapters 1, 2, 4, 5, 6 and 7. (0.65PM)		9		4.56	
		Plan (total)		**Actual (total)**	
		9		4.56	

Table 1 - Work progress description of Workpackage WP 1

Work package no.	WP 2	**Plan-Start:**	M01	**Plan-End:**	M15
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M15
Work package title	Vision for Manufacturing 2.0				
Activity Type	Coordination activities				
Participant involved	SAP, POLIMI, IC, IPK				

Work package summary of progress towards objectives

The first year of the project put emphasis on building the ActionPlanT vision which will be used as the foundation for the ActionPlanT roadmap in the second year of the project. Work started initially with the formulation of the STEEP Analysis framework, global megatrends, and several influencer reports such as Gartner and McKinsey in order to identify the prominent factors that affect lives of European producers and consumers alike. An elaborate validation experiment was undertaken at the First ActionPlanT workshop in Dresden, Germany where the ActionPlanT invited experts were asked to validate a series of scenarios. Over 400 answers were collected and analysed through weighted metrics method - this finally resulted in formulation of five comprehensive ambitions for the European manufacturing enterprises. In parallel, this WP also investigated several future ICT enabled manufacturing scenarios - emphasis was given on understanding manufacturing interests from two complementary directions (a) bottom-up: identifying requirements from manufacturing challenges in plants and shop floors, and (b) studying new trends in the world of application and enterprise software and analysing how these could enhance production & business in enterprises. The ambitions and trends were put together in the ActionPlanT Vision document (Deliverable D2.2) and the writing of it was primarily done in the last three months of the first year. The vision thus developed is based on validated premises of scenarios and ambitions but work remains to be done in order to finalize the taxonomy of the Manufacturing Business Web components and turning it into a public whitepaper for distribution.

In terms of use of resources in WP2, minor deviation is reported since Task 2.4 on validation could not be started until the delivery of the vision document in M12. For Task 2.2, although many internal (company stakeholders) were involved in identifying future scenarios/services for Manufacturing 2.0, their effort were not reported on the project.

Recommendations from Interim Review: None in the interim review.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
See resource clarification on task level.	27	18.17
	Plan (total)	**Actual (total)**
	27	18.17

Task no.	Task 2.1	**Plan-Start:**	M01	**Plan-End:**	M06
Lead Participant	IC	**Actual-Start:**	M02	**Actual-End:**	M09
Task title	STEEP Analysis				
Activity Type	Coordination activities				
Participant involved	IPK, IC				

Progress of work

STEEP Analysis (Societal, Technological, Environmental, Economical, Political) has been delivered. We managed to list the most important external factors that influence adoption of modern ICT for manufacturing.

This list of factors has been validated during Dresden workshop with 40 European experts of

manufacturing, and linked precisely with each cluster of ICT topic. Eventually the results have been reworked in the context of the vision document (Task 2.3)

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
IPK (M07-M09): Conclusions from the T1.1 were interfaced with the STEEP Analyses. The identified research topics and their allocation to the “Factories of the Future” – clusters were mapped according to the STEEP Factors. (1PM) IC (M07-M09): IC Team comprising Mourad, Gael and Hadrien completed STEEP Analysis report (1.59PM) IC (M04-M06): Developed draft of D2.1: analysis of steep factors for each cluster of topic provided by WP1. Presentation of work during internal review (Nov.24th) and preparation for next review with the commission (Dec 14th) (1.75PM) IC (M01-M03): During task 2.1 IC organized the team work both internally within Intercim and externally with SAP. We participated to kick-off and other preparatory meetings, selected reference roadmap documents and prepared the STEEP methodology to be followed (1PM)	5.5	5.34
	Plan (total)	**Actual (total)**
	5.5	5.34

Task no.	Task 2.2	**Plan-Start:**	M01	**Plan-End:**	M09
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M09
Task title	Future Services for Manufacturing 2.0				
Activity Type	Coordination activities				
Participant involved	SAP, POLIMI, IC				

Progress of work

The work in Task 2.2 started with the identification of future scenarios of manufacturing and how novel/ground-breaking advances in ICT (and particularly software systems) could revolutionize European manufacturing. As part of this task and during the First ActionPlanT workshop in Dresden, the list of manufacturing challenges and clusters were discussed with internal SAP solution managers and IBU (Industrial Business Unit) stakeholders for validation and reality check. The realization that "enablement components" of the manufacturing business web started to take shape during the timeline of this task. At all time, links were maintained to STEEP factors, ICT topic clusters and ambitions.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M01-M03): Identified and consolidated the manufacturing strategy with identified research directions in remote service maintenance, product service systems, and integration. (1.5PM) SAP (M07-M09): Around 2 PMs were spent in reviewing the draft of STEEP analysis as well as for supporting the STEEP validation exercise at the first workshop. (2PM) SAP (M04-M06): Deriving the technological services which are necessary for preparing the STEEP Analysis. (1.54PM) IC (M07-M09): Mourad, Gael and Hadrien started to work on vision document and help link STEEP with roadmap (0.69PM) IC (M04-M06): Weekly collaboration calls with SAP to define the vision (0PM) IC (M01-M03): Definition of future services (0.5PM) POLIMI (M01-M03): No contribution from Polimi so far. (0PM) POLIMI (M04-M06): No contribution so far. (0PM)	12.5	6.23
	Plan (total)	**Actual (total)**
	12.5	6.23

Task no.	Task 2.3	**Plan-Start:**	M03	**Plan-End:**	M12
Lead Participant	SAP	**Actual-Start:**	M03	**Actual-End:**	M12
Task title	ICT Vision for Manufacturing 2.0				
Activity Type	Coordination activities				
Participant involved	IC, SAP, IPK				

Progress of work

The task successfully brought together results of STEEP analysis, consolidation of three ActionPlanT workshops, and numerous internal as well as external consultations. The final result was reported in an extensive ActionPlanT vision document (Deliverable D2.2), named as the "Vision of a Manufacturing Business Web". Based on the feedback received from experts at the STEEP analysis process as well as other vision and influencer reports analysed by WP2 stakeholders, it was decided that research in ICT for manufacturing should not only look at the existing manufacturing challenges but also look into the advances made in the field of application and social software and investigate how these advances could be put to practice in the manufacturing domain. The taxonomy of Manufacturing Business Web (MBW) was thus formed consisting of three related pillars of ICT for manufacturing research - the "Enablement Components", "Functional Components", and "Business Components". The decision to make the business aspects of ICT for Manufacturing explicit was made because of the realization that for every research carried out in the future, the end results need to have business value.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M01-M03): Discussed structure of the vision document, intended audience and impacts. (0.2PM) SAP (M07-M09): The framework for the Vision document was prepared in the Month of February (0.4PM) SAP (M10-M12): Drafted the vision document and used it as a basis for internal consultation. Also liaised with experts (both internal and external to the consortium) and incorporated feedback in the vision document. (1.2PM) SAP (M04-M06): Further refined different requirements for ICT for Manufacturing and drilled down into different thematic area requirements. (0.5PM) IPK (M10-M12): Work on the Vision (1.5PM) FTK (M07-M09): WS with experts on STEEP analysis and report (0.2PM) FTK (M04-M06): Preparation for the task (0.5PM) FTK (M10-M12): input for the thematic/functional components of the manufacturing business web in D2.2 (0.3PM) IC (M10-M12): Finalization of STEEP analysis and development of vision document (1.8PM)	9	6.6
	Plan (total)	**Actual (total)**
	9	6.6

Task no.	Task 2.4	**Plan-Start:**	M09	**Plan-End:**	M15
Lead Participant	IC	**Actual-Start:**	M12	**Actual-End:**	M15
Task title	Scenario, Services and Technology Validation				
Activity Type	Coordination activities				

Progress of work

The validation task 2.4 started with the STEEP Analysis carried out during the First ActionPlanT workshop - it is worth noting that the scenarios therefore have already been validated. During formulation of the ActionPlanT Vision document (Deliverable D2.2), emphasis was given of making it coherent and logically linking it to validated list of global megatrends, ambitions (filtered out from weighted scores of ActionPlanT workshop feedback), and several cited

influencer reports. During Months 12-15, the taxonomy and soundness of the individual components of the Manufacturing Business Web would be investigated through a consultation process with a subset of ActionPlanT experts and the final validated Vision document, in form of a publicly distributable whitepaper, would be delivered to the commission by ActionPlanT. Minor deviation is being reported in the start of Task 2.4 – the reason being that the validation of the vision document could not be started unless the document was delivered in M12.		
Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
IC (M10-M12): Validation not started yet (0PM)	0	0
	Plan (total)	**Actual (total)**
	0	0

Table 2 - Work progress description of Workpackage WP 2

Work package no.	WP 3	**Plan-Start:**	M06	**Plan-End:**	M24
Lead Participant	POLIMI	**Actual-Start:**	M06	**Actual-End:**	M24
Work package title	Roadmap for FP8				
Activity Type	Coordination activities				
Participant involved	SAP, IPK, EPFL, POLIMI, FTK				

Work package summary of progress towards objectives

The main objective of WP3 is to generate a roadmap which will serve as a basis of the work programme of Framework Programme 8 based on the vision of WP2.

The main activities carried out in year 1 by WP 3 belong to Task 3.3 and resulted in the deliverable D3.1 Draft FP8 Research Roadmap which are described in detail below in Task 3.3. Task 3.2 will be initialized as planned in the second year of the project. Task 3.1 was incorporated in Task 3.3, because the actions taken in both tasks cannot be separated in the operational work.

D3.1 was submitted two weeks after the planned date. This is due to the execution of the workshop in Cernobbio in late May in conjunction with the World Manufacturing Forum and the need to properly implement the results in the holistic view of the already existing topics in D3.1. This delay has no impact on other work packages, tasks or future work.

There are no significant deviations observed during the reported period.

Recommendations from Interim Review: None in the interim review.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
See resource clarification on task level.	14.83	10.13
	Plan (total)	**Actual (total)**
	37	10.13

Task no.	Task 3.1	**Plan-Start:**	M06	**Plan-End:**	M12
Lead Participant	FTK	**Actual-Start:**	M06	**Actual-End:**	M12
Task title	Definition and Scheduling of Priority Topics				
Activity Type	Coordination activities				
Participant involved	POLIMI, FTK, SAP				

Progress of work

The activities performed in WP3 in order to produce D3.1 were started in M6 inside T31 and continued also in T33 to deliver D31 at M12. Some of the activities to be carried out in task T31 include the analysis of the needs, importance & urgency of the research topics, the leverage on the TRL, the prioritization and schedule of the topics. It was considered that in order to carry out those activities, a set of RT was needed and then it was decided to postpone them.

In this period the work has been focused in the definition of research topics. Starting from the results of T11 (SOTA - Inventory Analysis Results), the several Manufacturing Challenges were identified as an initial input for the identification of Research Topics in the different Workshops held with the experts. The results of the Workshops, the proposed RT, were completed and in some cases merged, split and reviewed by several researchers from the partners involved in the task.

Resources allocated / Plan vs. Actual	**Plan**	**Actual**

	(period)	(period)
SAP (M07-M09): Participated in the roadmapping knowledge cafe exercise and helped in formulating the TRL. Furthermore, reviewed and supported the manufacturing challenges for the first workshop. (0.63PM) SAP (M10-M12): In conjunction with the work on ActionPlanT vision, SAP was involved in adding the concept of Manufacturing Business Web and enablement components - and helped in the definition of novel ICT paradigms for manufacturing. However, no work is reported for scheduling research topics. (0.97PM) EPFL (M07-M09): Contribution to definition of RTs for the roadmap (0.06PM) FTK (M10-M12): Assistance to Cernobbio's WS with experts, preparation and revision of RTs, contribution on mapping the identified RT and Manufacturing Challenges, contribution on Robotics Roadmap (EUROP SRA), contribution to D3.1. (1PM) FTK (M07-M09): WS with experts, report on experts group results, contribution to RT 02, 05, 10, 14 (1PM) FTK (M04-M06): Task preparation (0.5PM) POLIMI (M04-M06): No justification (1PM)	9	5.16
	Plan (total)	**Actual (total)**
	9	5.16

Task no.	Task 3.2	**Plan-Start:**	M11	**Plan-End:**	M22
Lead Participant	IPK	**Actual-Start:**	M11	**Actual-End:**	M22
Task title	Validation through Industrial and IT Expert Interviews and Online Surveys				
Activity Type	Coordination activities				
Participant involved	SAP, IPK, EPFL, POLIMI				

Progress of work

The objective of this task is to perform a validation of the ActionPlanT Roadmap utilizing the competencies of the multidisciplinary ICT and Manufacturing Community. Since the beginning of this task in month 11, the draft framework for continuous roadmap validation was developed. In the next reporting period, the validation framework will be finalized and initially applied.
In this reporting period, we do not observe any deviation from the working plan.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M10-M12): No contribution in this topic since validation exercise has not started (0PM) IPK (M10-M12): 0.1 PM Initial work to conceptualise and create the continuous roadmap validation framework has been performed. (0.1PM) EPFL (M10-M12): Contribution to relevant definitions (0.7PM)	2.33	0.8
	Plan (total)	**Actual (total)**
	14	0.8

Task no.	Task 3.3	**Plan-Start:**	M09	**Plan-End:**	M24
Lead Participant	POLIMI	**Actual-Start:**	M09	**Actual-End:**	M24
Task title	Research Roadmap for Framework Programme 8				
Activity Type	Coordination activities				
Participant involved	SAP, IPK, EPFL, FTK, POLIMI				

Progress of work

The main objective of Task 3.3 is the development of the roadmap which resulted in the first draft D3.1 Draft FP8 Research Roadmap.

<table>
<tr><td colspan="3">According to the DoW the “development […] will be based on collaborative work with the experts community created in WP5, like for example expert workshops, brainstorming sessions and online cooperative work.” Following this planned approach three workshops in Dresden, Brussels and Cernobbio have been organized, where experts from both areas, manufacturing and information technology, held brainstorming-like sessions in order to find new Research Topics. 53 Research Topics have been identified so far and they are shared for collaborative work on the wiki (www.actionplant-community.org), where the experts can edit, comment and discuss the topics and support the maturation process.

“The roadmap will be based on the scenarios and vision developed in WP2 […]” as stated in the DoW was carried out by an internal work force where a mapping and gap-analysis of the Research Topics regarding the vision was performed. This analysis is included in D3.1.

All activities should be understood as on-going activities and not finished. Following the Agile Roadmapping Approach further workshops will be used to identify missing Research Topics in the areas identified by the gap analysis. Furthermore, internally driven consolidation work and alignment with vision will follow the same process. The main future activities encompass the execution of the next three workshops, moving from the identification of Research Topics to the shaping of Research Topics and initializing validation exercises which will be done in Task 3.2.
There are no major deviations observed in resources in Task 3.3.</td></tr>
<tr><th>Resources allocated / Plan vs. Actual</th><th>Plan (period)</th><th>Actual (period)</th></tr>
<tr><td rowspan="3">SAP (M10-M12): Helped in drafting and review of D3.1 - the draft research roadmap. (0.57PM)
IPK (M10-M12): Supporting the IT Expert workshops, including preparation and definition of the Research Topics. (0.21PM)
EPFL (M10-M12): Contribution to relevant definitions (0.2PM)
POLIMI (M10-M12): Initiating and preparing the roadmapping workshops. Gap-Analysis of Research Topics. Preparation of D3.1. (3.19PM)</td><td>3.5</td><td>4.17</td></tr>
<tr><th>Plan (total)</th><th>Actual (total)</th></tr>
<tr><td>14</td><td>4.17</td></tr>
</table>

Table 3 - Work progress description of Workpackage WP 3

Work package no.	WP 4	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	EPFL	**Actual-Start:**	M01	**Actual-End:**	M24
Work package title	Industrial Learning - Developing Competence and Competitiveness				
Activity Type	Coordination activities				
Participant involved	SAP, IPK, EPFL, FTK, IC, PATRAS, POLIMI, AGORIA				

Work package summary of progress towards objectives

The goal of WP4 of ActionPlanT in the first year of project was (i) to develop a model and methodology for Industrial Learning, (ii) to identify the target audience categories and define and design the content of Industrial Learning Pilot Events, (iii) implement the first ILPE and (iv) starting the development of an appropriate evaluation and validation methodology for the proposed Industrial Learning approach.

With respect to the first goal, a novel Industrial Learning model for the development of competencies in the domain of ICT for Manufacturing has been developed and documented in deliverable D4.1. This model is based on an original experience and practice at EPFL which is tested as reference model and methodology to be used by all Swiss Universities. This methodology was adapted for appropriate use in the context of Industrial Learning, i.e. development of competencies within an industrial environment with focus on ICT for Manufacturing.

With this in mind, in order to scope the application of the developed model and methodology within ActionPlanT, we consider the domain of the FP research projects relevant to ICT as our framework for specifications of such competencies.

The implementation of the above (T4.3) started with the first ILPE#1 organized and delivered in Dresden using SAP curriculum, technology and resources as described in D4.2, with the plan for implementation of the proposed Industrial Learning Approach with a series of ILPEs and associated definition of topics for each one of them. This plan is subject of revision according to the gathered experiences and lessons learnt from the implemented ILPEs and the project workshops and activities overall. The results of ILPE#1 indicated a positive overall impression of the participants and suggested ways to improve the forthcoming ILPEs from various viewpoints such as documentation, focus on local audience, organization of sessions and testing.

The proposed Industrial Learning approach is evaluated and will be validated using a methodology under development in Task 4.4. This methodology will allow us to extract informed and measured conclusions and lessons that will help to define a feasible strategy for the exploitation and use of the ActionPlanT Industrial Learning model and methodology.

In terms of use of resources in WP4, we did not observe significant deviations during the reported period.

Recommendations from Interim Review:

a. The framework for the learning approach presented does not seem particularly novel
Response: Based on a preliminary analysis of the state of the art carried out at the early stages of the project, the ActionPlanT learning approach has several innovative aspects:

- The ActionPlanT IL methodology is generally applicable and not tailored to specific business needs, manufacturing sector, etc.;
- The learning content covers all challenging topics in ICT for manufacturing identified through an intensive roadmapping work;
- ActionPlanT suggests an extended Teaching Factory concept as a basis for the industrial learning framework whereas most of the reported applications of the Teaching Factory

paradigm focus on academic training rather than on industrial learning;

- The ActionPlanT IL methodology considers the validation and exploitation of validated results which is not usual in existing learning methodologies;

The "gap" analysis (offer vs. needs) will be an on-going process during the project, which will help to further elaborate the learning approach in two ways:

- Rearranging the steps of the approach proposed in the previous version of the deliverable D4.1 and adding new steps;

- Revising the content of the steps in order to clearly show how it links to the objectives of ActionPlanT and emphasise its novelty with respect to existing ones.

Unlike traditional Industrial Learning methodologies which are need-driven, meaning that they are designed to respond to specific needs raised by demanding companies, the ActionPlanT IL methodology is opportunity-driven aiming to offer for manufacturing companies an opportunity to develop and implement new professional competencies created by recent achievements of research and innovation actions in the domain of cutting edge ICT for manufacturing.

The novelty of the ActionPlanT Industrial Learning methodology resides in two facts: (i) the steps composing the methodology, and (ii) the content of the steps. The first relates to the comprehensiveness of the methodology starting with the analysis of ICT for manufacturing competencies and ending with the dissemination of exploitable results. Most of existing methodologies stop at the evaluation step and the competencies analysis in this methodology relies on a new IL model and not on company internal needs analysis as it is used to be.

The second fact concerns the way in which the different steps are undertaken where all relevant available techniques including the most recent ones are considered to meet the different learning styles of the trainees and the requirements of the learning topics.

b. The bigger concern is that there is no mention of how this is to be used after the project is complete. If the intention is solely to use this approach during the project then its impact will be very limited. If, as expected, the intention is to present this as a proven framework for others to use then there needs to be action to encourage take-up of the approach and this latter aspect is missing. The document (D4.1) needs to be re-issued taking into account the reviewers' comments.

Response: In addition to the consideration of dissemination actions about the ActionPlanT IL results in WP 5, we devote the last step of the revised version of ActionPlanT industrial learning approach to the exploitation of the validated IL results where we present the ways in which the approach will be used after the completion of the project. In that direction, we have approached professional training organisations (e.g. ALBA), industrial training experts (IPK Berlin, TU Munich) and Vocational Training organisations (GIM-CH, an association of SMEs in Switzerland, CETIM in France, VDMA in Germany) with which we intend to develop collaboration to discuss the applicability of the ActionPlanT Industrial Learning approach to their activities and integrate their feedback. ActionPlanT partners have direct contacts with these organisations. Some of these contacts are sustained through the Manufuture and EFFRA networks. D4.1 was revised and submitted before the periodic review taking these comments into account.

c. The deliverable (D4.2) lists eleven potential training themes, subject of the ILPEs, but the rationale for this selection is not provided.

Response: The rationale for selection has been included in the revised D4.2 deliverable.

d. For nine of these themes detailed, final curricula are provided using the same template for describing the Industrial Learning Modules. The deliverable leaves open, if and by when the final curricula of the two other remaining training themes are to be provided. Similarly, table 3

leaves open, by which instrument the 'Lean Product Development' (or 'Lean Flow Factory') theme, subject of the Lausanne ILPE, is to be trained. These two loose ends are to be fixed in a re-edited, amplified document.

Response: The missing ILPE (lean product development) has been included in the revised deliverable D4.2. Details of the later ILPE will may change according to the experiences of early ILPE execution as well as new questions from road mapping point of view.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
See resource clarification on task level.	34.91	27.06
	Plan (total)	**Actual (total)**
	52.3	27.06

Task no.	Task 4.1	**Plan-Start:**	M01	**Plan-End:**	M04
Lead Participant	EPFL	**Actual-Start:**	M01	**Actual-End:**	M09
Task title	Development of a Methodology and the piloting of IT for Industrial Learning				
Activity Type	Coordination activities				
Participant involved	PATRAS, SAP, EPFL, POLIMI				

Progress of work

The main goal of Task 4.1 was to develop a model and a methodology for Industrial Learning (IL) in the domain of ICT for Manufacturing. The work started with a state of the art and gap analysis of Industrial Learning for ICT for Manufacturing and the definition of a specifications framework and the requirements for an IL model and methodology in the context of ICT for Manufacturing.

The developed model is based on an original experience and practice at EPFL for the purpose of developing a competence based curriculum for the Mechanical Engineering Section of EPFL. This model and associated methodology were adapted for the purposes of ActionPlanT to appropriately use them for the development of competencies on ICT for Manufacturing within an industrial environment.

The proposed methodology for the development and implementation of Industrial Learning activities builds on the Industrial Learning model. It consists of 12 steps starting from the analysis of competencies for ICT for Manufacturing within the given specifications framework, going through the identification of the target groups and the definitions of their respective learning needs, and, the definition and delivery of IL activities. At the end, the IL activities are evaluated and validated following an appropriate methodology under development in Task 4.4.
The undertaken state of the art and gap analyses have shown that the proposed methodology involves innovative aspects in comparison to existing IL methodologies for ICT for manufacturing.

Various alternatives for disseminating validated results from ActionPlanT IL have been investigated and contacts with different organizations with interest in IL has been established in order to elaborate the ways of collaboration.

The result of T4.1, i.e. the ActionPlanT Industrial Learning Model and Methodology is documented in deliverable D4.1 and its application and evaluation started in the form of Industrial Learning Pilot Events (ILPE) with the ILPE#1 in Dresden on 3 February 2011.

Deliverable D4.1 has been revised based on the feedback of the 1st interim review and

resubmitted within the new deadlines The work required to revise D4.1 has been performed without requiring extra project resources and it did not create any major deviations in the planning of the activities of WP4.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M04-M06): Assisted EPFL in preparing D4.1 - also reviewed the industrial learning model. (0.2PM) SAP (M01-M03): Reviewed and analysed (feasibility wise) the industrial learning model. (0.3PM) EPFL (M04-M06): Finalising D4.1 (0.75PM) EPFL (M01-M03): Developing IL model. Writing deliverable D4.1 (2.25PM) PATRAS (M07-M09): contribution to the state of the art analysis and D4.1 revisions (0.5PM)	6.5	6
	Plan (total)	**Actual (total)**
	6.5	6

Task no.	Task 4.2	**Plan-Start:**	M03	**Plan-End:**	M06
Lead Participant	IPK	**Actual-Start:**	M03	**Actual-End:**	M06
Task title	Definition of Audience & Content for Industrial Learning and Development of a Pilot Implementation Plan				
Activity Type	Coordination activities				
Participant involved	SAP, IPK, EPFL, FTK, IC, PATRAS, POLIMI, AGORIA				

Progress of work

Task 4.2 followed the IL-Approach developed in task 4.1 and executed the following activities:

- Identification of target groups
- Definition of Learning needs and target groups
- Analysis and classification of learning needs
- Identification of learning content
- Identification of ILPE and delivery mechanisms
-

Results were the entire curriculum for all ILPEs and a draft time plan for the execution as well as indicators for supporting validation. These results have been documented into the deliverable D4.2 and submitted for the review in December 2010. Based on the reviewers' feedback a revised version was provided in March 2011.

The task 4.2 has completed.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M04-M06): Assisted IPK in providing the contents for the first ILPE at Future Factory Living Lab in Dresden (0.5PM) SAP (M01-M03): Defined the concept of ILPEs and how they could be used to validate parts of the Industrial Learning model. (0.5PM) IPK (M01-M03): define first draft on D4.2 (1.51PM) IPK (M04-M06): Structure and content for the Industrial Learning Modules have been defined. (1.5PM) EPFL (M04-M06): Contribution to D4.2 (2.63PM) EPFL (M01-M03): Contribution to T4.2 (0.88PM) IC (M04-M06): Review of WP4 documents (0.15PM) AGORIA (M04-M06): - (0.2PM) AGORIA (M01-M03): Follow-up (0.13PM)	11	8.5
	Plan (total)	**Actual (total)**
	11	8.5

Task no.	Task 4.3	**Plan-Start:**	M03	**Plan-End:**	M20

Lead Participant	IC	**Actual-Start:**	M04	**Actual-End:**	M21
Task title	Implementation of the ActionPlanT Industrial Learning model				
Activity Type	Coordination activities				
Participant involved	AGORIA, POLIMI, PATRAS, IC, FTK, IPK, SAP, EPFL				

Progress of work

ILPE#1 completed and assessed. It took place at the Future Factory lab of SAP in Dresden and focused in the Teaching Factory Paradigm. We had three heterogeneous groups of 4 participants per group from both academia and industry. Two expert observers helped to assess this ILPE. Synthesis of recommendations of the trainees and the expert observers for further improving the industrial learning methodology & knowledge delivery mechanisms are included in an internal report on this ILPE.

ILPE#2 will take place on 29 June 2011 in Paris; preparation is in progress:
- WP4 leader will provide an introduction on our project and serious gaming
- A serious game developed by Intercim will be used. Participants will be grouped in two teams and challenged to demonstrate the difference in efficiency between a classic manufacturing organization based on 'push mode', and a novel organization implementing LEAN principles. This game simulates a small work centre with the two different physical organizations of work: a classic one in the morning, then a LEAN one in the afternoon.
- The results will be debriefed with participants and then reinforced by a wrap up presentation by UTC (Intercim sub contractor) providing more real-life examples and relating the lessons learned with the ICT Topics of ActionPlanT project.

(*In a classic organization of shopfloor new parts are produced at a certain fixed rate or by batch, then assembled, then stored. This organization creates a lot of buffers for intermediate and final storage and usually implies high costs for storage of intermediate goods. More recent organizations implement 'pull mode' where parts are produced on demand. This organization reduces buffers to their strict minimum, and reduces costs.)

Participants to ILPE#2 are 10 to 20 local contacts in the industry (process specialists, manufacturing engineers and students with a professional experience) that will play the game and give us their feedback on the game as an innovative pedagogic tool for factory employees.
Discussions for plans for next ILPEs have started.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M04-M06): Discussed implementation aspects of the Future Factory use cases and requirements. (0.2PM) SAP (M07-M09): Preparing the ILPE exercise for the first workshop - this included 3 SAP colleagues working around 5 days each for preparation of the Future Factory and setting up 3 instances of the exercise. Also helped in revision the questionnaire for the ILPE#1 exercise. (0.5PM) IPK (M07-M09): Rework on the deliverable Supporting of Industrial Learning Workshop (0.6PM) IPK (M04-M06): Preliminary discussions regarding implementation. (0.48PM) EPFL (M10-M12): Preparations for ILPE#2 and new initiatives for next ILPE activities (2PM) EPFL (M07-M09): Implementation of ILPE#1 and preparations for ILPE#2 (1.84PM) EPFL (M04-M06): Starting preparations for IL actions (1.83PM) FTK (M10-M12): Initial activities to organise an ILPE workshop at Tecnalia with the people dealing with Training (Human Resources Dep) (0.33PM) IC (M10-M12): Achievement of task 4.2 (definition of Paris workshop) and work on implementation of Paris workshop : Muscle Car Game (1PM) IC (M04-M06): preparation of Dresden & Paris workshops. Participation in	15.83 **Plan (total)** 28.5	10.53 **Actual (total)** 10.53

experts selection (0.15PM) IC (M07-M09): Hélène dedicate 10% FTE on workshop organization and ILPE (0.3PM) PATRAS (M07-M09): contribution to the preparations and implementation of the 1st ILPE (0.25PM) PATRAS (M10-M12): Preparations for WS2 - ILPE2, adjustment of Questionnaire / evaluation methodology Working meeting with EPFL in Patras on 19/4/2011 (0.75PM) AGORIA (M04-M06): - (0.1PM) AGORIA (M10-M12): Follow-up activity - indication of possible training organisations. (0.1PM) AGORIA (M07-M09): Follow-up activities (0.1PM)		

Task no.	Task 4.4	**Plan-Start:**	M09	**Plan-End:**	M24
Lead Participant	PATRAS	**Actual-Start:**	M09	**Actual-End:**	M24
Task title	Validation of the ActionPlanT industrial learning model				
Activity Type	Coordination activities				
Participant involved	SAP, IPK, EPFL, FTK, IC, PATRAS, AGORIA				

Progress of work

The task objectives up to the end of the first project year have been the following:
1) Evaluation of the first ActionPlanT ILPE
2) First definition of ILPE impact measurement criteria & concept definition for the approach to be used for the impact measurement of the industrial learning model and pilot events.

The respective task achievements have been the following:
Evaluation of the first ActionPlanT ILPE

- A Questionnaire has been structured around the four major building blocks of the learning process, i.e. attitude, knowledge, skills, and competencies
- Analysis of trainees feedback to the questionnaire: statistics & graphical presentation
- Qualitative assessment of the “contribution” of the 1st ILPE in improving the attitude, knowledge, skills and competence of the trainees with respect to the introduced learning module
- Synthesis of general observations on qualitative issues, such as the actual groups work flow and performance, the difficulties encountered by the trainees, their actual involvement, their co-operation level etc.
- Qualitative assessment of the overall impression of the trainees on the organization, structure, knowledge content, training aids, delivery mechanisms, major strengths and weaknesses of the ILPE
- Synthesis of recommendations of the trainees and the expert trainers / observers for further improving the industrial learning methodology & knowledge delivery mechanisms used in the ActionPlanT ILPEs

ILPE impact criteria and impact measurement approach

- Review of existing learning evaluation models
- Start defining a set of quantifiable criteria associated with the building blocks of the learning process: attitude, knowledge, skills, and competencies
- Assessment of a multi-criteria impact measurement approach for a weighted estimation of an overall ILPE performance score

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
IPK (M10-M12): Validation of ILPE'1 in Dresden through three IPK employees (0.25PM) EPFL (M10-M12): Analysis of ILPE#1; (0.4PM)	1.58	2.03
	Plan (total)	**Actual (total)**

EPFL (M07-M09): Contribution to the preparation of the evaluation report of ILPE#1 (0.13PM) PATRAS (M07-M09): assessment of 1st ILPE Questionnaire responses, preparation of 1st ILPE draft evaluation report, D4.4 outline & work planning (0.5PM) PATRAS (M10-M12): Definition of impact measurement criteria Definition of multi-criteria ILPE impact measurement concept Approach development (0.75PM)	6.3	2.03

Table 4 - Work progress description of Workpackage WP 4

Work package no.	WP 5	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	AGORIA	**Actual-Start:**	M01	**Actual-End:**	M24
Work package title	Multiplication, Communication and Dissemination				
Activity Type	Coordination activities				
Participant involved	AGORIA, PATRAS, SAP				

Work package summary of progress towards objectives

The first year of ActionPlanT focused on awareness making among major multipliers and the identification of individual experts. The communication media and channels where put in place for soliciting feedback on invitation-only basis. A tight interface with the overall Factories of the Future roadmapping activity was established.

Recommendations from Interim Review:

a. This strategy includes a sound contact management policy, supported by a so-called contact management file that ensures that contacts to any external experts or organisations are carefully organised and maintained. […] However, there is virtually no information on how this contact database will be utilised to achieve effective dissemination.

Response: Effective dissemination will be done by providing the contact persons, in particular contacts within multiplier organisations, with material that they can forwarded via their communication channels (websites, newsletters). The contact database concentrated on the most relevant contacts and has already undergone several iterations. The ActionPlanT newsletter, which is in preparation, will be distributed to the contacts in the contact management file but also to entry points in multiplier organizations, associations, and ETPs. Also D5.2 is being updated following the project review in June.

b. It seems important to the project that the conflict between the wiki platform and the CRM is resolved as soon as possible, although the extent to which this problem may hamper knowledge gathering is not clear. The use of organisational multipliers is a sound scheme for increasing the dissemination capability of the project. However, while good progress has been made on identifying and contacting these multiplier organisations, it is not clear how these can be motivated to actively participate in the dissemination process.

Response: After some initial legal issues, it was decided to separate the hosting of the ActionPlanT public website and the ActionPlanT community website. The former is being hosted by SAP AG, contains general information and updates about the project. Furthermore, it has a “documents” section from where the public deliverables as well as the workshop reports can be downloaded. The community website is hosted by Fraunhofer IPK and contains resources related to the roadmapping process (including reference documents, workshop agenda, participants lists etc). Furthermore, it contains a secure wiki where the ActionPlanT vision and roadmapping research topics are listed for discussion and feedback from workshop experts. After M12 the consortium plans to open up participation to a wider audience. The community website also hosts a plugin called CiviCRM for distribution of newsletters to ActionPlanT stakeholders. We envisage more active participation in year 2 of the project when (1) the wiki access is opened up to a wider audience, (2) the vision document is available for consultation, and (3) the monthly ActionPlanT newsletters are distributed from the community. Furthermore during the roadmap validation processes, the WP3 stakeholders will get in touch with identified experts and request feedback through one to one phone calls thereby ensuring a deeper engagement.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
See resource clarification on task level.	6.25	7.91
	Plan (total)	**Actual (total)**

	17.6	7.91

Task no.	Task 5.1	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M24
Task title	Dissemination Planning, Operations and Controlling				
Activity Type	Coordination activities				
Participant involved	SAP, AGORIA				

Progress of work

In terms of dissemination, the first year of ActionPlanT was primarily targeted at awareness making about the goals and targets of the project. In the early stages, the project was promoted through a press release, a workshop at the ICT 2010 conference in Brussels and promotion at workshops organised by the European Commission DG INFSO and DG Research & Innovation (Factories of the Future Beyond 2013 – Which role for ICT? – Workshop on the Impact of the PPPs). These early dissemination actions were supported by the ActionPlanT website (http://www.actionplant-project.eu/).

In conjunction with the preparation of the first ActionPlanT workshop in Dresden that took place at the beginning of February 2011, a contact management file was progressively filled with the coordinates of experts that would be potentially invited to this first workshop. When experts occupy key roles in the so called 'multiplier' organisations such as technology platforms, associations, standardisation organisations, etc., this was indicated.
In the selection of experts for the first workshop, high priority was given to inviting key contacts from expert organisations. This would result in experts not only taking part based on their personal expertise but also on behalf of a multiplier.

The selection of participants in subsequent workshops in May (Brussels and Cernobbio), did also involve experts delegated by multipliers, although there the selection of invited experts was more focussing on the personal expertise of participants. This approach was also sustained during the preparation of the workshop that will take place in Paris at the end of June. In the meantime, the project was promoted at the World Manufacturing Forum (workshop at Cernobbio, Italy on 18 May) and the ICT-proposers Days in Budapest, during the Factories of the Future session on the Smart Factory call (19-20 May).

During the first project year, no public consultation was carried out. The WIKI that contains the draft research topics resulting from the workshops is currently only accessible to experts that participated in the workshops. A public consultation from within ActionPlanT is planned in Autumn 2011. This consultation will be widely promoted making use of the contact management file that includes about 300 contacts, among which the key contacts in multiplier organisations. Furthermore, an ActionPlanT public workshop is being prepared at the e-Challenges conference that will take place in Florence in October 2011.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M04-M06): Flyers, brochures, and business cards for different events such as ICT 2010, conference on emergent technologies, and EFFRA brochure. (0.57PM)	1.8	1.8
SAP (M07-M09): The communications department of SAP helped in the preparation of the logistics for the first workshop. The local team at Dresden was also involved in helping with the arrangement (logistics, catering, transportation etc.). (0.5PM)	**Plan (total)**	**Actual (total)**
SAP (M01-M03): Identified scope and resource needs - discussed with internal Global Communications Department. (0.2PM)	3.6	1.8
SAP (M10-M12): The senior management of SAP (Uwe Kubach & Jochen Rode) spent around 5 PD in total disseminating ActionPlanT to industry		

peers and for inviting experts to future ActionPlanT workshops. (0.28PM) AGORIA (M01-M03): initial website setup (0.1PM) AGORIA (M04-M06): - (0.15PM)		

Task no.	Task 5.2	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	AGORIA	**Actual-Start:**	M01	**Actual-End:**	M24
Task title	Populate and Update Website Content and Newsletter				
Activity Type	Coordination activities				
Participant involved	AGORIA				

Progress of work

The website was established, explaining the purpose of the project and referring to the events where ActionPlanT is promoted.

Given the fact that during the first year of the project, the collection of opinions and feedback was organised on invitation-only basis, no newsletter was issued during this period. A consultation document is under preparation. This consultation document will be available from the public website and will be promoted through a newsletter explaining the background of the document, its purpose and the process through which it was established. The communication channels have been identified.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M10-M12): The SAP communications department dedicated at least 5 PD towards updating the website and its contents. (0.28PM) AGORIA (M01-M03): - (0.25PM) AGORIA (M10-M12): Updates after Dresden workshop (0.2PM) AGORIA (M07-M09): Minor updating (0.1PM) AGORIA (M04-M06): - (0.15PM)	1	0.98
	Plan (total)	**Actual (total)**
	2	0.98

Task no.	Task 5.3	**Plan-Start:**	M03	**Plan-End:**	M24
Lead Participant	POLIMI	**Actual-Start:**	M03	**Actual-End:**	M24
Task title	The Wiki Platform				
Activity Type	Coordination activities				
Participant involved	SAP				

Progress of work

A WIKI was established (not accessible, neither visible through the public website), to which the ActionPlanT workshop participants have been granted access for fine-tuning research topics.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M07-M09): Reviewed the wiki platform and gave feedback. Worked on refining some of the research topics and adding 3-4 new research topics to the wiki. (0.29 PM) (0.29PM) SAP (M01-M03): Discussed WIKI needs - set up a DMZ wiki which was subsequently discarded in favour of a more open wiki. (0.2PM) (0.2PM) SAP (M10-M12): Around 2 PD were spent on adding contents of Cernobbio workshop and refining existing research topics. (0.11PM) (0.11PM) IPK (M07-M09): ActionPlanT Community and Wiki site hosting, setup and support (2PM)	0.45	2.65
	Plan (total)	**Actual (total)**
	1	2.65

AGORIA (M10-M12): Involvement in set-up process (0.05PM)		

Task no.	Task 5.4	**Plan-Start:**	M03	**Plan-End:**	M24
Lead Participant	AGORIA	**Actual-Start:**	M03	**Actual-End:**	M24
Task title	Multiplier Engagement and Management and Stakeholder Involvement				
Activity Type	Coordination activities				
Participant involved	AGORIA, PATRAS				

Progress of work

A contact management file has been established, listing relevant multiplier organisations and relating them to experts or contact persons. In the first year of the project, the purpose of the contact management file was primarily to keep track of the involvement of experts and the related multiplier organisations in the workshops. When identifying experts that should be invited, the coverage of the multiplier organisations was taken into account.

In particular, the impact of ActionPlanT was strengthened by strongly interfacing ActionPlanT with the EFFRA Industrial Research Advisory Group, which is developing the EFFRA beyond 2013 Roadmap for the Factories of the Future PPP under the next Framework Programme.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
PATRAS (M10-M12): Interfacing with Manufuture ISG Interfacing with EFFRA Interfacing with Initiative on European Learning Factories (0.5PM) AGORIA (M01-M03): - (0.18PM) AGORIA (M10-M12): Primary focussing on close involvement in roadmapping and vision development process as consortium participant. Participation and representation of ActionPlanT at European and International events. (0.5PM) AGORIA (M07-M09): Contact management in view of Workshop Dresden (0.6PM) AGORIA (M04-M06): - (0.45PM)	2.73	2.48
	Plan (total)	**Actual (total)**
	6	2.48

Task no.	Task 5.5	**Plan-Start:**	M12	**Plan-End:**	M24
Lead Participant	PATRAS	**Actual-Start:**	M12	**Actual-End:**	M24
Task title	Exploitation and Sustainability of ActionPlanT Results				
Activity Type	Coordination activities				
Participant involved	PATRAS				

Progress of work

The main objectives during the first phase of the task are the following:

- Establish links with networks, platforms and associations that have a sustained impact on ICT research & industrial learning programmes in Europe.
- Assessment of existing impact measurement models and approaches associated with research and innovation roadmaps and work programmes

During the first month of the task, interactions with EFFRA IRAG have been mainly pursued. EFFRA IRAG has started structuring the Research Roadmap of the Factories of the Future PPP beyond 2013. Thus, interactions focus on identifying a common ground for embedding the ActionPlanT ICT vision & roadmap in the long term research work programmes of the FoF PPP. Moreover, an assessment of recent research work programmes impact measurement activities (e.g. FP7, FoF etc.), as well as of stakeholders' proposals on measures of success for future

EU research and innovation funding (e.g. in the context of the CSFRI Green Paper consultation etc.), has started.		
Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
	0.27	0
	Plan (total)	**Actual (total)**
	3.5	0

Task no.	Task 5.6	**Plan-Start:**	M18	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**		**Actual-End:**	
Task title	Research Roadmap Release Event				
Activity Type	Coordination activities				
Participant involved	SAP				
Progress of work					
not started yet					
Resources allocated / Plan vs. Actual			**Plan (period)**		**Actual (period)**
			0		0
			Plan (total)		**Actual (total)**
			1.5		0

Table 5 - Work progress description of Workpackage WP 5

Work package no.	WP 6	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M24
Work package title	Project Management				
Activity Type	Management activities				
Participant involved	AGORIA, SAP				

Work package summary of progress towards objectives

The main objective of Work Package 6 is to provide an effective project management to support and carry out project governance, project administration, quality control, event and risk management.
The specific objective for this period was to set-up an information technology infrastructure for the projects internal collaboration, the external website, and community functions.

The activities and achievements in this reporting period regarding this task are:

- A Project Management Structure is put in place. A weekly project meeting (SCRUM call) takes place every Friday. Scheduled and ad-hoc WP calls are taken place regularly and extraordinarily.
- Project Website and ActionPlanT Community website are made operational (see task 6.4). ActionPlanT Community website is used as a platform for the experts to contribute to the ActionPlanT Roadmap and Vision.
- Several project meetings and workshops have been successfully held (see Task 6.3).
- A Quality Assurance procedure for deliverables has been put in place (see Task 6.2). Deadlines are tracked and monitored by the Project management using the collaboration platform EMDESK on a day to day basis.

Recommendations from Interim Review: None in the interim review.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
See resource clarification on task level.	4.3	4.36
	Plan (total)	**Actual (total)**
	8.6	4.36

Task no.	Task 6.1	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M24
Task title	Project Management, Administration and Support				
Activity Type	Management activities				
Participant involved	AGORIA, SAP, SAP				

Progress of work

The main objective of the Project Management, Administration and Support task is to set up and maintain an infrastructure for project management, coordination and administration.

The specific objective for this reporting period was to set up the project governance structure and to oversee the meetings, protocols, and follow-ups.

The activities and achievements in this reporting period regarding this task are:

- A comprehensive management structure is set up. Roles and responsibilities of the different positions in the project management structure are communicated.
- Schedules for the respective meetings are published and followed.
- Invitations, agendas, protocols and follow up of to do lists of meetings are administered

within this task.
- Support is given to all project collaborators to maintain schedules and due dates of deliverables and reports and to prepare the necessary documentation for formal obligations.

Building upon the above achievements, particular management efforts have gone into instilling a culture of quality and timely delivery. In spite of this, most Year 1 deliverables were submitted with delay; the management will continue working with the partners to redress this and set expectations with the Commission correctly.

The preparation of Deliverable D6.1 Contractual Reports According to Grant Agreement incl Progress Report, management report, cost statements dissemination report started in M11. Submission was delayed until August (M15) due to the insufficient input to management in the required timeframes.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M04-M06): SAP Effort (0.45) (0.45PM) SAP (M01-M03): SAP Effort (0.2 PM) (0.2PM) SAP (M10-M12): SAP (0.3PM) (0.3PM) SAP (M07-M09): Ongoing administration (0.3 PM) (0.3PM) AGORIA (M01-M03): - (0.04PM) AGORIA (M04-M06): - (0.02PM)	1.15	1.31
	Plan (total)	**Actual (total)**
	2.3	1.31

Task no.	Task 6.2	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M24
Task title	Quality Assurance and Risk Management				
Activity Type	Management activities				
Participant involved	SAP				

Progress of work

General Objectives of the ActionPlanT Quality Assurance is to cover the main processes of the project concerned with providing results within and outside the project. Results include deliverables, work documents as well as media for dissemination, publications and presentation of the project.

The specific objective for this period was to set-up a document facility and control system for producing deliverables and work documents that also overviews the approval of publication before release.

During this reporting period, a Quality Assurance procedure for Deliverables/Work Documents has been put in place that includes the following steps and procedures applying the defined quality standards for the project: Both deliverables and work documents are *drafted* by their respective owners. They are then distributed to be *consolidated* by the project partner. After consolidation and update of the owner, the document is sent to a *Peer for review*. Taking into Peer's comments, the owner revises the document and when ready sends to the Approval delegate for *approval*. When delegate approves, the document is *submitted* to the Commission. When rework is requested then the procedure is repeated

The Quality Assurance procedure has been carefully managed and monitored to ensure that task owners have a firm plan for their preparation timeline while the innovation of their scientific work is not under danger of being stifled. The consistent application of management QA, exercise of due diligence and risk monitoring is recorded in the weekly meeting minutes.

The project management had identified shortcomings in how Quality Assurance has worked for

the period under reporting. Weaknesses have been noted in: adherence to the QA schedule; results from peer quality reviews of working documents; scientific scrutiny of deliverables; follow-up on internal quality review comments and critical recommendations; quality of English; adherence to project standards. The project management has taken all necessary actions, on a case-by-case basis, to improve on weak areas, including realigning QA schedule according to agreed realistic targets when deadlines slip, bolstering peer reviews by introducing second and third rounds as well as engage multiple reviewers. The management correctly sought advice from the EC when it became impossible to reconcile the scientific coordinator's view on deliverable D3.1 Draft Roadmap with that of the deliverable owner, following successive rounds of QA where it was felt that critical review comments were not properly addressed.

The general objectives of the ActionPlanT Risk Management is to avoid or minimise impact of potentially possible but unforeseen or unlikely external or internal events that change the likelihood to achieve the targeted outcome in projected time, quality or cost.

The specific objective for the reporting period was to set up procedures regarding efficient risk management procedure that constitutes effective monitoring and reporting.

The technical coordinator implements mitigation wherever and whenever necessary. Not all events can be foreseen but the continuous monitoring shall catch all events that endanger the success of the project or the quality of the results.

Risk management identified a large number of items that subsequently became project issues and provided contingency/mitigation solutions, with varying levels of take-up as duly documented in meeting minutes and project emails.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M04-M06): SAP Effort (0.46) (0.46PM) SAP (M01-M03): SAP Effort (0.1 PM) (0.1PM) SAP (M10-M12): SAP (0.26PM) (0.26PM) SAP (M07-M09): Deliverable and working documents, Dresden workshop (0.3 PM) (0.3PM)	0.75	1.12
	Plan (total)	**Actual (total)**
	1.5	1.12

Task no.	Task 6.3	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M24
Task title	Workshop Management and Training Event Management				
Activity Type	Coordination activities				
Participant involved	SAP				

Progress of work

The objective of this task is to support the organisation of the project workshops and trainings. The activities during this period included the delivery of D6.3 Workshop Plan and organisation of the following ActionPlanT workshops:

- Workshop 1 1-3 February 2011 Dresden
- Roadmapping Workshop 1, 2 May 2011 Brussels, Belgium
- Roadmapping Workshop 2, 18 May 2011 Como - Italy

The organisational tasks amongst others included the arrangements for the locations, coordination of workshop objectives, budgetary control of workshop costs, drafting, sending and following up on invitations to experts, preparing the workshop agendas and developing the schedule. Reimbursement, controlling and reporting of the costs for invited experts are also covered under this task. Travel cost reimbursement guidelines were put in place and subsequently refined in agreement with comparable EC travel policies, SAP controlling

practices and auditable accounting principles.

At around €15,000 Year 1 costs have amounted to less than what had been budgeted for. This figure includes some but not all of the workshop and expert travel reimbursement costs for the Dresden, Brussels and Cernobbio workshops. The reason why not everything is included is because not everything was claimed for by the end of M12 (May). This leaves a comfortable budget in the second year.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M01-M03): SAP Effort (0.3 PM) (0.3PM) SAP (M10-M12): Roadmapping workshops in Brussels and Cernobbio (0.55 PM) (0.55PM) SAP (M07-M09): Dresden workshop management (0.5PM) (0.5PM)	1.75	1.35
	Plan (total)	**Actual (total)**
	3.5	1.35

Task no.	Task 6.4	**Plan-Start:**	M01	**Plan-End:**	M24
Lead Participant	SAP	**Actual-Start:**	M01	**Actual-End:**	M24
Task title	Technical Infrastructure for Community Interaction				
Activity Type	Management activities				
Participant involved	AGORIA, SAP				

Progress of work

The activities and achievements in this reporting period regarding this task are:

- The ActionPlanT project website (http://www.actionplant-project.eu/) is set up. It contains an overview on the project and objectives. Project Workshops are announced through this website. It also provides project related news and videos. Some project documents can be obtained through login to the restricted area of the website.
- ActionPlanT Community Website (http://www.actionplant-community.org/) is set-up. It has both public and restricted areas. The restricted areas are dedicated to the communication for the Community Members and Experts. It contains a forum and a Wiki. Wiki is used for the collaboration of the Consortium members and the experts to work on the ActionPlanT Roadmap and Vision. The platform functions include also those for promotion i.e. email distribution, the announcement, management, and registration for workshops as well as for training events.
- The project is governed through the management and collaboration platform EMDESK. EMDESK is used to assist the project and the individual partners to comply with obligations and commitments.

Resources allocated / Plan vs. Actual	**Plan (period)**	**Actual (period)**
SAP (M10-M12): Maintenance of community website, updates following workshops (0.22 PM) (0.22PM) SAP (M07-M09): Maintaining community website (0.2) PC Effort (0.1PM) (0.2PM) AGORIA (M07-M09): Follow-up (0.1PM) AGORIA (M04-M06): - (0.02PM)	0.65	0.58
	Plan (total)	**Actual (total)**
	1.3	0.58

Table 6 - Work progress description of Workpackage WP 6

3.3. Project Management

The main objective of ActionPlanT project management is to support the implementation of the project through building a strong management structure, planning and controlling, facilitating effective communication and clear decision making processes with minimum administrative overhead. The project management has the twin role of organising the consortium internally while engaging and maintaining the contact, communications and contractual obligations of the consortium vis-à-vis the European Commission. In ActionPlanT, the project management is also tasked with workshop and other events organisation.

The principle in ActionPlanT has been to decouple the scientific coordination from operational, day-to-day project management tasks. The scientific and technology management in ActionPlanT has the challenging task of steering the project partners of this CSA through difficult, uncharted territory in working towards the project goals with high expectations on quality. The key challenges for the project management have been maintaining a coherent project internally and meeting the consortium's obligations towards the Commission obligations, holding steady in a project that is unexpectedly multifaceted and complex.

Project and consortium management tasks include:

- Project communications
- Task scheduling, planning
- Controlling, monitoring
- Deliverable preparation
- Reporting (internal and external)
- Quality Assurance
- Risk management
- Review preparation
- Project administration

Progress with individual aspects of the project management for Year 1 has been summarised in the WP6 descriptions of section 3.2.

This CSA is carrying out important groundwork on behalf of the European Commission. The bottom line of project management goal is to ensure the timely delivery of work that is of superior quality. In Year 1, this goal has not been achieved and both quantitative and qualitative aspects of the ActionPlanT results need to improve in the second and final year of the project. The project management will continue providing the consortium with solid management guidance, work facilitation and a robust supporting infrastructure upon which the partners can rely for letting their scientific excellence emerge and fulfil their potential.

3.3.1. Project management tool

EMDESK has been selected as the integrated online collaboration platform and project management tool for ActionPlanT. EMDESK is tailor-build for managing FP7 projects and facilitates multi-partner qualitative and quantitative reporting, allowing for greater management control. EMDESK functionality includes:

- Overall project planning
- Deliverable management
- Resource planning and reporting
- Task and Work Package planning and reporting

- Milestone achievement
- Periodic Cost reporting
- Mailing list management
- User and group management with access control
- Change-controlled document repository
- Project calendar
- Other online collaboration facilities (project Wiki, forums, internal email)
- Report preparation for the European Commission

3.3.2. Consortium changes

On 1 January 2011, ActionPlanT consortium partner #4 (Fundación Fatronik) became Fundación Tecnalia Research and Innovation. Tecnalia takes over all rights and obligations of Fatronik. The project coordinator has been formally notified of the change which will be formally submitted to the European Commission in the form of an Amendment.

On 17 March 2011 Dassault Systèmes DELMIA acquired ActionPlanT consortium partner #5 (Intercim SAS). The project coordinator has been formally notified of the change which will be formally submitted to the European Commission in the form of an Amendment.

3.3.3. Project planning and status

	Year 1												Year 2												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Completion
WP 1	State of the Art Analysis (100%)																								●●●●●●●●●●
Task 1.1	Capturing and Evaluating the Inventory (100%)																								●●●●●●●●●●
Task 1.2	Knowledge Map for Supporting Roadmapping Activities (100%)																								●●●●●●●●●●
Task 1.3			Technology Readiness and Impact Analysis (100%)																						●●●●●●●●●●
WP 2	Vision for Manufacturing 2.0 (100%)																								●●●●●●●●●●
Task 2.1		STEEP Analysis (100%)																							●●●●●●●●●●
Task 2.2	Future Services for Manufacturing 2.0 (100%)																								●●●●●●●●●●
Task 2.3			ICT Vision for Manufacturing 2.0 (100%)																						●●●●●●●●●●
Task 2.4												Scenario, Services and Technology Validation (50%)												●●●●●●●●●●
WP 3						Roadmap for FP8 (34%)																			●●●●●●●●●●
Task 3.1						Definition and Scheduling of Priority Topics (100%)																			●●●●●●●●●●
Task 3.2											Validation through Industrial and IT Expert Interviews and Online Surveys (5%)														●●●●●●●●●●
Task 3.3									Research Roadmap for Framework Programme 8 (20%)																●●●●●●●●●●
WP 4	Industrial Learning - Developing Competence and Competitiveness (64%)																								●●●●●●●●●●
Task 4.1	Development of a Methodology and the piloting of IT for Industrial Learning (100%)																								●●●●●●●●●●
Task 4.2			Definition of Audience & Content for Industrial Learning and Development of a Pilot Implementation Plan (100%)																						●●●●●●●●●●
Task 4.3				Implementation of the ActionPlanT Industrial Learning model (50%)																					●●●●●●●●●●
Task 4.4									Validation of the ActionPlanT industrial learning model (25%)																●●●●●●●●●●
WP 5	Multiplication, Communication and Dissemination (35%)																								●●●●●●●●●●
Task 5.1	Dissemination Planning, Operations and Controlling (50%)																								●●●●●●●●●●

Task 5.2	Populate and Update Website Content and Newsletter (50%)	●●●●●●●●●●
Task 5.3	The Wiki Platform (45%)	●●●●●●●●●●
Task 5.4	Multiplier Engagement and Management and Stakeholder Involvement (45%)	●●●●●●●●●●
Task 5.5	Exploitation and Sustainability of ActionPlanT Results (5%)	●●●●●●●●●●
Task 5.6	Research Roadmap Release Event (0%)	●●●●●●●●●●
WP 6	Project Management (50%)	●●●●●●●●●●
Task 6.1	Project Management, Administration and Support (50%)	●●●●●●●●●●
Task 6.2	Quality Assurance and Risk Management (50%)	●●●●●●●●●●
Task 6.3	Workshop Management and Training Event Management (50%)	●●●●●●●●●●
Task 6.4	Technical Infrastructure for Community Interaction (50%)	●●●●●●●●●●

Table 7 - Project planning and status (Gantt chart)

4. Deliverables and Milestones Tables

4.1. Overview of Adherence to Plan of Deliverables

Del. No.	Deliverable name	Version	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I	Status	Contrac-tual	Actual / Forecast delivery date	Comments
D 5.1	Website, Press Release, and Presentation		WP 5	SAP	O	PU	M01	Submitted	Yes	30.09.10 (M04)	14.12.2010 (M07) Rework: Deliverable partly approved in Commission review 14/12/10
D 5.2	Multiplier Organisation and Management Plan		WP 5	SAP	R	CO	M03	Submitted	Yes	03.11.10 (M06)	14.12.2010 (M07) Accepted: Deliverable approved in Commission review 14/12/10
D 1.2	Knowledge Map		WP 1	IPK	R	PU	M04	Submitted	Yes	04.03.11 (M10)	08.02.2011 (M09) Consolidated: Internal review yielded comments and scope for rework
D 4.1	Industrial Learning Model and Methodology		WP 4	EPFL	R	PU	M04	Submitted	Yes	06.03.11 (M10)	06.03.2011 (M10) Submitted: Version 1.6 submitted to European Commission.
D 6.3	Workshop Plan		WP 6	SAP	R	PU	M04	Submitted	Yes	08.12.10 (M07)	14.12.2010 (M07) Accepted: Deliverable approved in

											Commission review 14/12/10
D 1.1	SOTA - Inventory Analysis Results		WP 1	IPK	R	PU	M06	Submitted	Yes	10.12.10 (M07)	10.12.2010 (M07) Submitted: Deliverable submitted to the European Commission
D 4.2	Training Material for Selected Topics of the Curriculum		WP 4	EPFL	R	PU	M06	Submitted	Yes	30.11.10 (M06)	14.12.2010 (M07) Rework: Deliverable rejected by the Commission in 14/12/10 review
D 1.3	Technology Readiness & Impact Analysis		WP 1	POLIMI	R	PU	M09	Submitted	Yes	31.03.11 (M10)	31.03.2011 (M10) Submitted: Version 1.0 submitted to the European Commission.
D 2.1	STEEP Analysis Report		WP 2	IC	R	PU	M09	Submitted	Yes	06.03.11 (M10)	06.03.2011 (M10) Submitted: Deliverable submitted to the European Commission
D 2.2	ActionPlanT Vision for Manufacturing 2.0		WP 2	SAP	R	PU	M12	Submitted	Yes	01.06.11 (M13)	01.06.11 (M13) Submitted: Deliverable Submitted to the European Commission
D 3.1	ActionPlanT Draft Roadmap		WP3	POLIMI	R	PU	M12	Submitted	Yes	30.06.11 (M13)	30.06.11 (M13) Submitted: Deliverable Submitted to the European Commission

Table 8 - Deliverables Table

4.2. Overview of Adherence to Plan of Milestones

Milestone no.	Milestone name	WP No.	Lead beneficiary	Delivery date from Annex I	Status	Actual / Forecast achievement date	Comments
M 5.1	Web site on line	WP 5	AGORIA	03	Yes	31.08.10 (M03)	Website online with some preliminary contents. Wiki to be hosted by another partner due to internal SAP restrictions.
M 1.1	Analysis of Existing Roadmaps and Vision documents	WP 1	IPK	06	Yes	10.12.10 (M07)	Deliverable D1.1 SOTA – Inventory Analysis Results submitted in December and approved.
M 2.1	Make vision ready	WP 2	SAP	12	No	15.06.11 (M13)	Following agreement with PO D2.2 Vision to be submitted later than M12, in time for the yearly review.

Table 9 - Milestones

4.3. Internal and external project Co-operation

4.3.1. Internal Meetings

Start Date	End Date	Description	Participants	Location
21.09.2010	22.09.2010	**Kick-off meeting** Project kick-off	All partners	Berlin, Germany
24.11.2010	24.11.2010	**ActionPlanT project meeting** Location: AGORIA, Diamant Building, level 0, room Huygens, Bd A. Reyers Ln 80, B-1030 Brussels Agenda: Preparation for first ActionPlanT review with the Commission on 14/12	All partners	Brussels, Belgium
28.02.2011	01.03.2011	**Deliverable 1.3 - TRL** WP1 Internal Workshop on finalizing the TRL methodology and deliverable	POLIMI, IPK, TECNALIA	Milano, Italy
17.05.2011	17.05.2011	**Pre-workshop meeting** WP3 roadmapping meeting: Gap analysis, matrix	POLIMI, IPK, TECNALIA, AGORIA, SAP, EPFL	Como, Italy

Table 10 - Internal Meetings

4.3.2. Conference Calls

Start Date	End Date	Description	Participants	Location
16.07.2010	16.07.2010	**EMDESK Training (WebEx)**	All partners	Telephone
16.07.2010	ongoing	**Weekly SCRUM call**	All partners	Conference call

Table 11 - Conference Calls

4.3.3. External Co-operation

Start Date	End Date	Description	Participants	Location
07.07.2010	07.07.2010	**Kick Off Meeting**	Klaus-Dieter Platte (SAP)	Brussels
09.07.2010	09.07.2010	**PPP Info Day** PP Info day PPP Info Day	Klaus-Dieter Platte (SAP)	Brussels
29.09.2010	29.09.2010	**NETWORKING Session on FOF**	Jon Agirre Ibarbia (FTK), Rikardo BUENO (FTK), Jacopo CASSINA (POLIMI), Chris DECUBBER (AGORIA), Dimitris KIRITSIS (EPFL), Thomas Knothe (IPK), Uwe KUBACH (SAP), Anirban Majumdar (SAP), Dimitris	ICT 2010

			MAVRIKIOS (PATRAS), Sonja Pajkovska Goceva (IPK), Klaus-Dieter Platte (SAP), Bojan STAHL (POLIMI), Hadrien Szigeti (IC), Marco TAISCH (POLIMI)	
14.10.2010	14.10.2010	**FP8 FOF Gathering Event (TBD) - ActionPlanT Introduction** FP8 FOF / ICT beyond 2013 - Presentation by Uwe Kubach	Jon Agirre Ibarbia (FTK), Chris DECUBBER (AGORIA), Uwe KUBACH (SAP), Klaus-Dieter Platte (SAP), Marco TAISCH (POLIMI)	European Commission / Brussels
14.12.2010	14.12.2010	**ActionPlanT First Review** Location: DG INFSO, Avenue de Beaulieu 31, Ground Floor - Room 84, 1160 Brussels	Jacopo CASSINA (POLIMI), Chris DECUBBER (AGORIA), Stavros Fotiadis (SAP), Dimitris KIRITSIS (EPFL), Thomas Knothe (IPK), Anirban Majumdar (SAP), Dimitris MAVRIKIOS (PATRAS), Sonja Pajkovska Goceva (IPK), Klaus-Dieter Platte (SAP), Bojan STAHL (POLIMI), Hadrien Szigeti (IC), Marco TAISCH (POLIMI)	Brussels, Belgium

Table 12 - External Meetings

4.3.4. Conference

Start Date	End Date	Description	Participants	Location
23.09.2010	23.09.2010	**Conference**	Chris DECUBBER (AGORIA), Klaus-Dieter Platte (SAP)	Berlin
27.09.2010	29.09.2010	**ICT 2010**	Klaus-Dieter Platte (SAP)	Brussels
25.11.2010	25.11.2010	**EC Workshop: Impact of the Factories of the Future PPP**	Klaus-Dieter Platte (SAP)	Brussels, Belgium

Table 13 - Conference

4.3.5. External Workshops

Start Date	End Date	Description	Consortium Participants	Location
01.02.2011	03.02.2011	**ActionPlanT First Workshop** ActionPlanT Workshop 1, including Roadmapping, ILPE#1	Jon Agirre Ibarbia (FTK), Ahmed Bufardi (EPFL), Jacopo CASSINA (POLIMI), Chris DECUBBER (AGORIA), Stavros Fotiadis (SAP), Dimitris KIRITSIS (EPFL), Thomas Knothe (IPK),	SAP Research Centre Dresden - Germany

			Anirban Majumdar (SAP), Dimitris MAVRIKIOS (PATRAS), Sonja Pajkovska Goceva (IPK), Klaus-Dieter Platte (SAP), Helene Riba (IC), Bojan STAHL (POLIMI), Hadrien Szigeti (IC), Marco TAISCH (POLIMI)	
02.05.2011	02.05.2011	**Roadmapping workshop** Targeted workshop	Jon Agirre Ibarbia (FTK), Ahmed Bufardi (EPFL), Jacopo CASSINA (POLIMI), Chris DECUBBER (AGORIA), Dimitris KIRITSIS (EPFL), Thomas Knothe (IPK), Dimitris MAVRIKIOS (PATRAS), Sonja Pajkovska Goceva (IPK), Klaus-Dieter Platte (SAP), Bojan STAHL (POLIMI), Marco TAISCH (POLIMI)	DG INFSO, EC, Brussels, Belgium
18.05.2011	18.05.2011	**Roadmapping workshop** Dedicated roadmapping workshop in sidelines of World Manufacturing Forum	Jon Agirre Ibarbia (FTK), Jacopo CASSINA (POLIMI), Chris DECUBBER (AGORIA), Dimitris KIRITSIS (EPFL), Thomas Knothe (IPK), Anirban Majumdar (SAP), Mourad Messaad (IC), Sonja Pajkovska Goceva (IPK), Bojan STAHL (POLIMI), Marco TAISCH (POLIMI)	Cernobbio, Italy

Table 14 - Workshop

5. Explanation of the Use of the Resources

5.1. Overview of actual allocated Resources versus estimates

Activity Type	P1 - SAP		P2 - IPK		P3 - EPFL		P4 - FTK		P5 - IC		P6 - PATRAS	
	P	A	P	A	P	A	P	A	P	A	P	A
Coordination activities												
WP 1	--	--	7.5	7.5	--	--	6.5	6.25	--	--	--	--
WP 2	11	7.34	4	2.5	--	--	--	1	8.5	7.33	--	--
WP 3	10.5	2.17	5	0.31	5	0.96	6	2.5	--	--	--	--
WP 4	5	2.2	6	4.34	19.5	12.71	5	0.33	4.5	1.6	7	5.25
WP 5	4.5	2.43	--	2	--	--	--	--	--	--	5.5	0.75
WP 6[2]	3.5	1.35	--	--	--	--	--	--	--	--	--	--
Total	**34.5**	**15.49**	**22.5**	**16.65**	**24.5**	**13.67**	**17.5**	**10.08**	**13**	**8.93**	**12.5**	**6**
Management activities												
WP 6[2]	4.5	2.79	--	--	--	--	--	--	--	--	--	--
Total	**4.5**	**2.79**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Other activities												
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Beneficiaries	**39**	**18.28**	**22.5**	**16.65**	**24.5**	**13.67**	**17.5**	**10.08**	**13**	**8.93**	**12.5**	**6**

Table 15 - Actual and estimated Efforts per Activity Type per Beneficiary for the full project period (in person-month)

P = Planned Effort, A = Actual Effort

[2] WP 6 includes two types of activities: Coordination and Management. Tasks 6.1, 6.2 and 6.4 fall under Management. These tasks are related to project management, risk management, quality assurance and providing the communication infrastructure. Task 6.3, on the other hand, is a Coordination type activity. This task provides support for the Project Workshops and Industrial Learning Events.

Activity Type	P7 - POLIMI		P8 - AGORIA		Total Activities		% of total person month	
	P	A	P	A	P	A	P	A
Coordination activities								
WP 1	6	1.81	--	--	20	15.56	12.3%	18.7%
WP 2	3.5	--	--	--	27	18.17	16.6%	21.8%
WP 3	10.5	4.19	--	--	37	10.13	22.8%	12.2%
WP 4	3	--	2.3	0.63	52.3	27.06	32.2%	32.5%
WP 5	--	--	7.6	2.73	17.6	7.91	10.8%	9.5%
WP 6	--	--	--	--	3.5	1.35	2.2%	1.6%
Total	**23**	**6**	**9.9**	**3.36**	**157.4**	**80.18**	**96.9%**	**96.4%**
Management activities								
WP 6	--	--	0.6	0.22	5.1	3.01	3.1%	3.6%
Total	**0**	**0**	**0.6**	**0.22**	**5.1**	**3.01**	**3.1%**	**3.6%**
Other activities								
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0%**	**0%**
Total Beneficiaries	**23**	**6**	**10.5**	**3.58**	**162.5**	**83.19**	**100%**	**100%**

Table 16 - Actual and estimated Efforts per Activity Type per Beneficiary for the full project period (in person-month)

P = Planned Effort, A = Actual Effort

Activity Type	P1 - SAP		P2 - IPK		P3 - EPFL		P4 - FTK		P5 - IC		P6 - PATRAS	
	P	A	P	A	P	A	P	A	P	A	P	A
Coordination activities												
WP 1	--	--	7.5	7.5	--	--	6.5	6.25	--	--	--	--
WP 2	11	7.34	4	2.5	--	--	--	1	8.5	7.33	--	--
WP 3	4.17	2.17	0.92	0.31	0.92	0.96	4.5	2.5	--	--	--	--
WP 4	3.07	2.2	4.74	4.34	13.11	12.71	2.85	0.33	2.57	1.6	4.61	5.25
WP 5	1.45	2.43	--	2	--	--	--	--	--	--	1.18	0.75
WP 6	1.75	1.35	--	--	--	--	--	--	--	--	--	--
Total	**21.44**	**15.49**	**17.15**	**16.65**	**14.03**	**13.67**	**13.85**	**10.08**	**11.07**	**8.93**	**5.79**	**6**
Management activities												
WP 6	2.25	2.79	--	--	--	--	--	--	--	--	--	--
Total	**2.25**	**2.79**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Other activities												
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Beneficiaries	**23.69**	**18.28**	**17.15**	**16.65**	**14.03**	**13.67**	**13.85**	**10.08**	**11.07**	**8.93**	**5.79**	**6**

Table 17 - Actual and estimated Efforts per Activity Type per Beneficiary for the Period (in person-month)

P = Planned Effort, A = Actual Effort

Activity Type	P7 - POLIMI		P8 - AGORIA		Total Activities		% of total person month	
	P	A	P	A	P	A	P	A
Coordination activities								
WP 1	6	1.81	--	--	20	15.56	18.6%	18.7%
WP 2	3.5	--	--	--	27	18.17	25.2%	21.8%
WP 3	4.33	4.19	--	--	14.83	10.13	13.8%	12.2%
WP 4	2.56	--	1.41	0.63	34.91	27.06	32.5%	32.5%
WP 5	--	--	3.62	2.73	6.25	7.91	5.8%	9.5%
WP 6	--	--	--	--	1.75	1.35	1.6%	1.6%
Total	**16.39**	**6**	**5.03**	**3.36**	**104.74**	**80.18**	**97.6%**	**96.4%**
Management activities								
WP 6	--	--	0.3	0.22	2.55	3.01	2.4%	3.6%
Total	**0**	**0**	**0.3**	**0.22**	**2.55**	**3.01**	**2.4%**	**3.6%**
Other activities								
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0%**	**0%**
Total Beneficiaries	**16.39**	**6**	**5.33**	**3.58**	**107.29**	**83.19**	**100%**	**100%**

Table 18 - Actual and estimated Efforts per Activity Type per Beneficiary for the Period (in person-month)

P = Planned Effort, A = Actual Effort

5.1.1. Analysis of actual resources versus planned for M01-M12, per Work Package

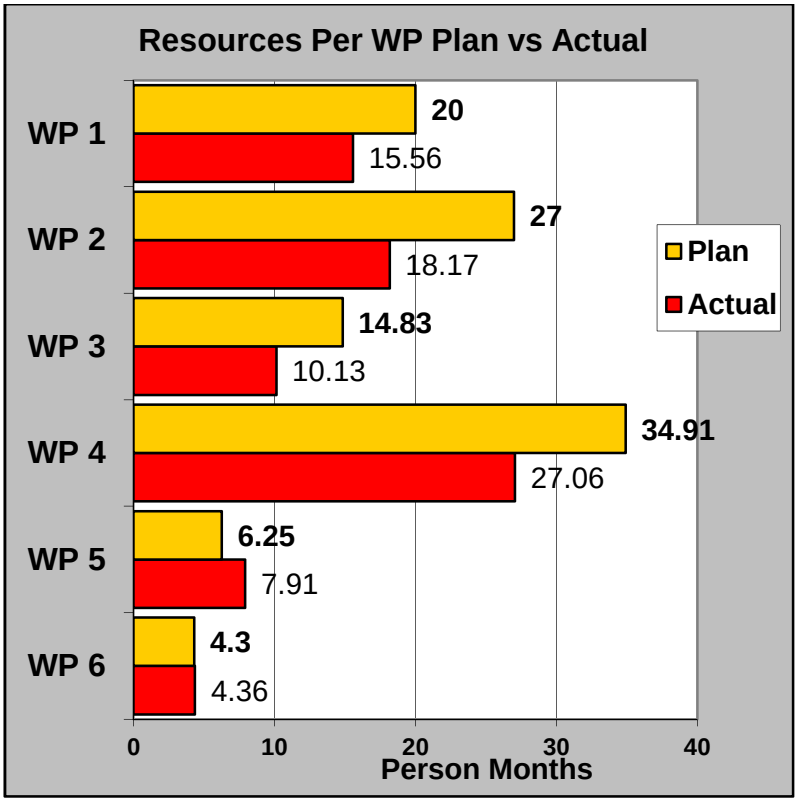

Figure 1: Resources per Work Package, plan vs actual for M01-M12

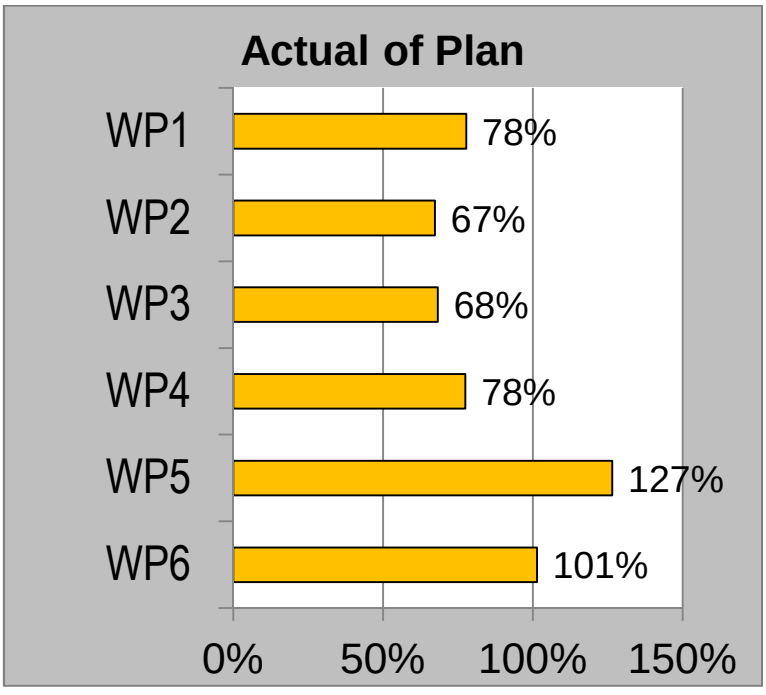

Figure 2: Resource utilisation per Work Package, plan vs actual for M01-M12

WP1 was scheduled to conclude in the first year following the successful completion of the state of the art/inventory, Knowledge Map and Technology Readiness Level tasks. While

working on the TRL deliverable (D1.3) it became clear that the usefulness of TRLs to prioritise could only be demonstrated later in the roadmapping process when Research Topics are more mature. Therefore, some effort for TRL application has been moved to the planning of the second year.

In WP2 a mistake in the tasks planning meant that T2.2 Future Services for Manufacturing had 12 PMs allocation, while the substantial T2.4 Scenario, Services and Technology Validation (concluding WP2 task in M12-M15) had no PM allocation. Also, partner Polimi's involvement in WP1 and WP3 meant that it could not allocate resources for its WP2 planning, which did not impact the WP2 activities.

In WP3 there was a delayed start and T3.1 Definition and Scheduling of Priority Topics is importantly continuing beyond year 1. No roadmap validation has taken place in M01-M12 which explains why 2PMs planned are moving to year 2 planning.

WP4 has seen one Industrial Learning Pilot Event held in the first year, which accounts for 5PMs of underspending in implementation task 4.3 compared to the plan.

WP5 included setting up and administering the project Wiki, work on which took up more effort than had been anticipated. Originally planned for hosting by SAP, it was moved to IPK for reasons of flexibility and easier administration. With hindsight, the effort required for the Wiki task was underestimated and this will be considered in future project planning.

WP6 exhibits no deviation from the plan although it should be noted that it workshop organising (coordination) activities have been taking up more time than anticipated and in future project planning this should be taken into consideration.

Overall, a number of activities originally planned for Year 1 have moved wholly or in part to Year 2 as part of ongoing adjustments to the project planning, driven by requirements, scientific decisions and quality considerations. Also, the late effective start of the project in M04 had a bearing on effort spending – the consortium's efforts in catching up during the second semester are notable and have resulted in the majority of year 1 objectives (deliverable submission) getting achieved by M12.

5.1.2. Analysis of actual resources versus planned for M01-M12, per partner

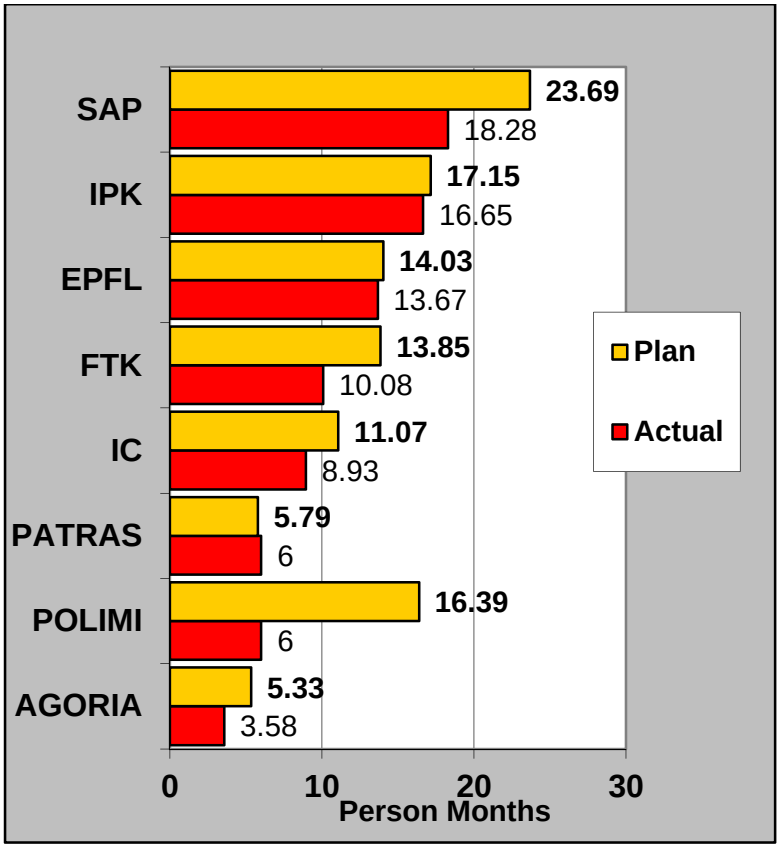

Figure 3: Resources per partner, plan vs actual for M01-M12

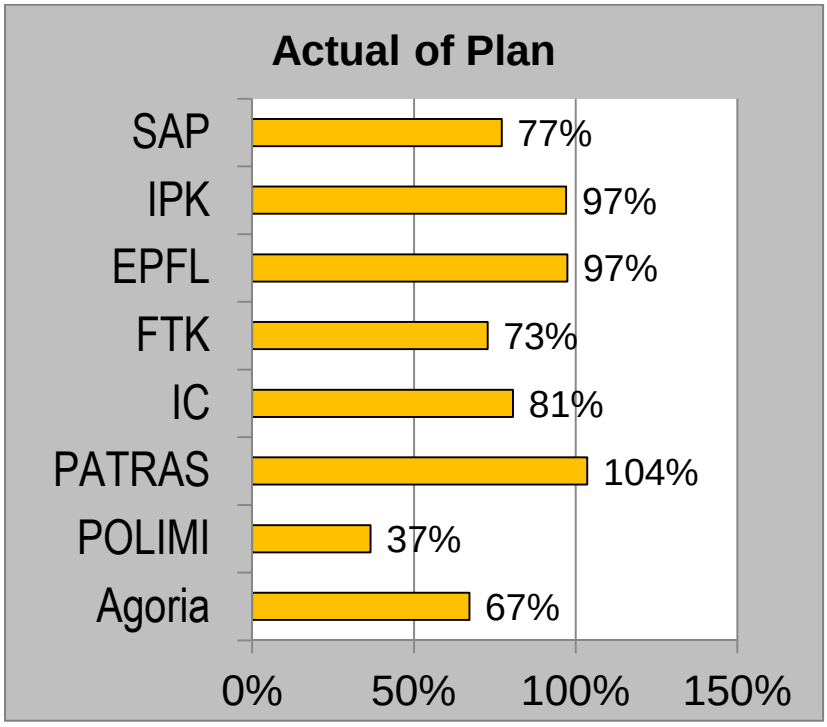

Figure 4: Resources utilisation per partner, plan vs actual for M01-M12

Some deviations in the actual versus planned effort for year 1 can be observed at the partner level, the majority exhibiting underutilisation of resources. Generally these relate to the later effective start of the project in M4 (September 2010).

SAP as the coordinating partner did not compensate for the slow start of the project by throwing more resources later, yet succeeded in its year 1 obligations culminating in the Vision deliverable. Its underspending is being reviewed with a view to addressing this in year 2 and ensuring it will consume the correct effort.

Partners IPK, EPFL and PATRAS do not exhibit deviations from the planning. Some Intercim effort for Year 1 was spent in M13 (i.e. beyond the reporting period) for the second ActionPlanT workshop, in Dassault Systèmes premises. FTK/Tecnalia does not have any responsibilities in year 1 and its modest contributions to other tasks will be compensated in year 2 where it has the lead on T3.1.

In the case of POLIMI, an administrative revision of reported effort after the end of Year 1 resulted in 6PMs of effort being reported. This revised downwards the provisional figures for the first six months that were presented in the December 2010 review in Brussels. It is widely expected that the internal administrative restrictions that result in reporting which deviates significantly from the plan will be offset in year 2 reporting.

The roadmap development and dissemination strategy that involves targeted expert workshops before inviting the wider community means that AGORIA has spent less effort in dissemination and multiplication activities than was originally planned for Year 1 and this effort has now been moved to year 2.

5.1.3. Analysis of overall project resourcing

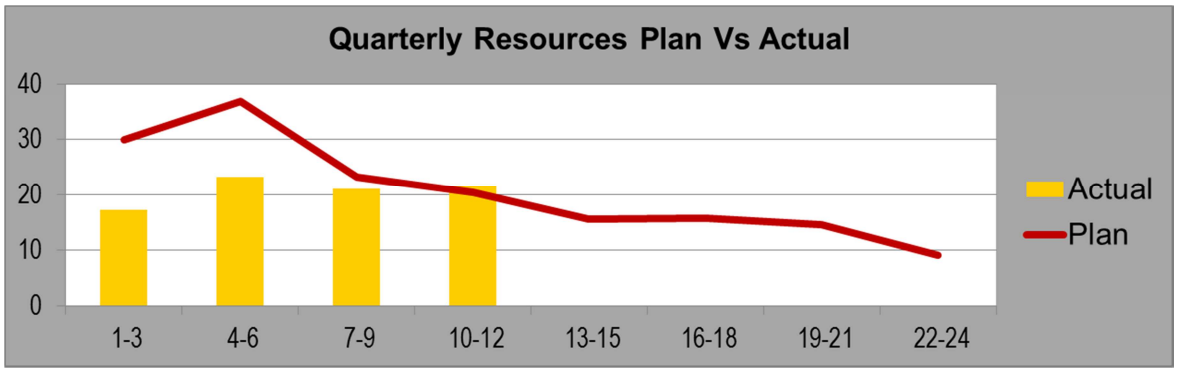

Figure 5: Quarterly resources, plan vs actual

Due to the late start and roadmapping strategy elaborated in the process, the levels of actual effort follow a more linear distribution than the “spike” initially anticipated for the middle of year 1. This adjustment to the provisional planning at the start of the project is well understood and does not pose a concern to the project management or project risk.

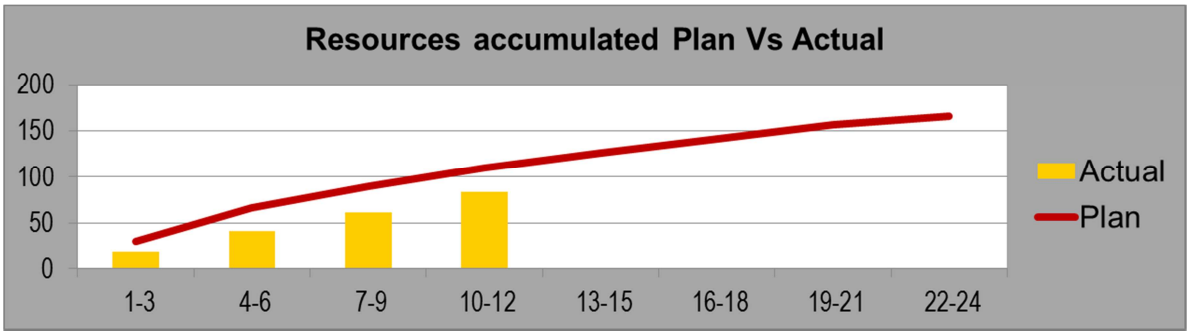

Figure 6: Cumulative resources, plan vs actual

As it is clear why the actual effort differs from the planned, the picture of the cumulative resources for Y1 does not give cause for concern.

5.2. Actual allocated Resources of subcontractors

5.2.1. IC

Intercim has subcontracted part of its WP2 tasks, in particular for the delivery of the STEEP analysis report to Université de Technologie de Compiègne (UTC). The staff effort that has been subcontracted is given in the table below.

In person months	WP 2	WP 4	Total (WP 2 and 4)
Intercim	5.83	1.6	**7.43**
Université de Technologie de Compiègne	1.5	0	**1.5**
Total (IC and UTC)	**7.33**	**1.6**	**8.93**

Table 19 - Actual Efforts of Intercim and its Subcontractor for WP 2 and 4 for the Period (in person-month)

In total 1.5 person months of staff effort was subcontracted. The significant difference between the planned and actual staff efforts for Intercim during M01-M12 is partially due to shifting of some effort to the subcontractor. The subcontracting contract has been set up early in the project so that the additional resource could be allocated as of November 2010. One of the IC team members has also suffered a long absence (2 months) due to personal event. The teamwork has been adapted accordingly, and the staff effort planned but not utilized will be leveraged later in the project for vision validation and participation to WP3.

5.2.2. SAP

For this reporting period, SAP has subcontracted part of its activity, mainly project management to Platte Consult.

The activities that Platte Consult performed under the sub-contract were:

- Task 5.3 The Wiki Platform
- Task 6.1 Project Management, Administration and Support
- Task 6.2 Quality Assurance and Risk Management
- Task 6.3 Workshop Management and Training Event Management
- Task 6.4 Technical Infrastructure for Community Interaction

5.3. Overview of actual allocated Costs versus estimates

Activity Type	P1 - SAP		P2 - IPK		P3 - EPFL		P4 - FTK		P5 - IC	
	P	A	P	A	P	A	P	A	P	A
Coordination activities	749,740.00	57,018.00	255,616.00	175,101.57	173,700.00	119,612.94	184,000.00	99,609.53	159,300.00	125,745.41[3]
Management activities	115,566.00	96,967.00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Other activities	2,500.00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total Beneficiaries	**867,806.67**	**153,985.00**	**255,616.00**	**175,101.57**	**173,700.00**	**119,612.94**	**184,000.00**	**99,609.53**	**159,300.00**	**125,745.41**[4]

Table 20 - Actual and estimated Costs per Activity Type per Beneficiary for the full project duration (in EURO)

Activity Type	P6 - PATRAS		P7 - POLIMI		P8 - AGORIA		Total Costs		% of total costs	
	P	A	P	A	P	A	P	A	P	A
Coordination activities	111,900.00	66,693.62	250,051.00	36,612.72	96,150.00	42,551.68	**2,004,275.14**	**722,945.47**	**95.3%**	**88%**
Management activities	0,00	0,00	0,00	0,00	5,100.00	2,112.44	**120,666.67**	**99,079.44**	**5.7%**	**12%**
Other activities	0,00	0,00	0,00	0,00	0,00	0,00	**2,500.00**	**0.00**	**0.1%**	**0%**
Total Beneficiaries	**111,900.00**	**66,693.62**	**250,051.00**	**36,612.72**	**101,250.00**	**44,664.12**	**2,103,623.00**	**822,024.91**	**100%**	**100%**

Table 21 - Actual and estimated Costs per Activity Type per Beneficiary for the full project duration (in EURO)

[3] Intercim cost figures are estimated and have not been provided officially
[4] Intercim cost figures are estimated and have not been provided officially

Activity Type	P1 - SAP		P2 - IPK		P3 - EPFL		P4 - FTK		P5 - IC	
	P	A	P	A	P	A	P	A	P	A
Coordination activities	462,337.96	57,018.00	196,617.78	175,101.57	131,444.44	119,612.94	88,777.78	99,609.53	116,926.39	125,745.41[5]
Management activities	59,733.33	96,967.00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Other activities	2,500.00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total Beneficiaries	**524,571.30**	**153,985.00**	**196,617.78**	**175,101.57**	**131,444.44**	**119,612.94**	**88,777.78**	**99,609.53**	**116,926.39**	**125,745.41[6]**

Table 22 - Actual and estimated Costs per Activity Type per Beneficiary for the Period (in EURO)

[5] Intercim cost figures are estimated and have not been provided officially
[6] Intercim cost figures are estimated and have not been provided officially

Activity Type	P6 - PATRAS		P7 - POLIMI		P8 - AGORIA		Total Costs		% of total costs	
	P	A	P	A	P	A	P	A	P	A
Coordination activities	69,810.10	66,693.62	144,157.42	36,612.72	48,725.38	42,551.68	**1,258,797.25**	**722,945.47**	**95.1%**	**88%**
Management activities	0,00	0,00	0,00	0,00	2,550.00	2,112.44	**62,283.33**	**99,079.44**	**4.7%**	**12%**
Other activities	0,00	0,00	0,00	0,00	0,00	0,00	**2,500.00**	**0.00**	**0.2%**	**0%**
Total Beneficiaries	**69,810.10**	**66,693.62**	**144,157.42**	**36,612.72**	**51,275.38**	**44,664.12**	1,323,580.58	822,024.91	100%	100%

Table 23 - Actual and estimated Costs per Activity Type per Beneficiary for the Period (in EURO)

With the exception of SAP, the cost deviations for all other partners are reflecting the deviations in effort that were analysed in section 5.1.

SAP's Coordination activities planned cost include the workshop budget of €200,000, of which only €14,729.00 was spent in Year 1 (for the Dresden workshop). This is because the expenses for the two workshops in May 2011 (M12) were not claimed until M13 (year 2).

COST/BUDGET FOLLOW-UP TABLE					*) total budget figures - not EC funding		
Contract N°:	**258617**	**Acronym: ActionPlanT**			**Date:**	**28.07.2011**	
PARTIC.	**TYPE of EXPEND- ITURE**	**BUDGET**	**ACTUAL COSTS (EUR)**			**Pct. spent**	**Remaining Budget (EUR)**
			Period 1	**Period 2**	**Total**	**Total**	
		e	a	b	e1	e1/e	e-e1
P1 SAP	**Total Person-month**	**39**	**18.28**	**0**	**18.28**	**46.87%**	**20.72**
	Perso.*	345,666.14	76,771.75	0.00	76,771.75	22.21%	268,894.39
	Sub	128,000.00	61,078.00	0.00	61,078.00	47.72%	66,922.00
	Consum.*	7,030.50	0.00	0.00	0.00	0.00%	7,030.50
	Other*	358,266.96	16,135.25	0.00	16,135.25	4.50%	342,131.71
	Travel*	28,843.07	0.00	0.00	0.00	0.00%	28,843.07
	Total	**867,806.67**	**153,985.00**	**0.00**	**153,985.00**	**17.74%**	**713,821.67**
P2 IPK	**Total Person-month**	**22.5**	**16.65**	**0**	**16.65**	**74.00%**	**5.85**
	Perso.*	268,186.28	164,810.94	0.00	164,810.94	61.45%	103,375.34
	Travel*	39,068.86	10,290.63	0.00	10,290.63	26.34%	28,778.23
	Total	**307,255.14**	**175,101.57**	**0.00**	**175,101.57**	**56.99%**	**132,153.57**
P3 EPFL	**Total Person-month**	**24.5**	**13.67**	**0**	**13.67**	**55.80%**	**10.83**
	Perso.*	215,600.00	108,101.66	0.00	108,101.66	50.14%	107,498.34
	Consum.*	0.00	33.22	0.00	33.22	0.00%	-33.22
	Travel*	16,000.00	11,478.06	0.00	11,478.06	71.74%	4,521.94
	Total	**231,600.00**	**119,612.94**	**0.00**	**119,612.94**	**51.65%**	**111,987.06**

* including share of indirect costs

COST/BUDGET FOLLOW-UP TABLE					*) total budget figures - not EC funding		
Contract N°:	**258617**	**Acronym: ActionPlanT**			**Date:**	**28.07.2011**	
PARTIC.	**TYPE of EXPEND- ITURE**	**BUDGET**	**ACTUAL COSTS (EUR)**			**Pct. spent**	**Remaining Budget (EUR)**
			Period 1	**Period 2**	**Total**	**Total**	
		e	a	b	e1	e1/e	e-e1
P4 FTK	**Total Person-month**	**17.5**	**10.08**	**0**	**10.08**	**57.60%**	**7.42**
	Perso.*	133,668.34	90,775.58	0.00	90,775.58	67.91%	42,892.76
	Travel*	18,331.66	8,833.95	0.00	8,833.95	48.19%	9,497.71
	Total	**152,000.00**	**99,609.53**	**0.00**	**99,609.53**	**65.53%**	**52,390.47**
P5 IC	**Total Person-month**	**13**	**8.93**	**0**	**8.93**	**68.69%**	**4.07**
	Perso.*	107,100.00	0.00	0.00	0.00	0.00%	107,100.00
	Sub	42,000.00	0.00	0.00	0.00	0.00%	42,000.00
	Consum.*	0.00	11.94	0.00	11.94	0.00%	-11.94
	Other*	0.00	2,924.10	0.00	2,924.10	0.00%	-2,924.10
	Travel*	10,200.00	2,565.54	0.00	2,565.54	25.15%	7,634.46
	Total	**159,300.00**	**5,501.58**	**0.00**	**5,501.58**	**3.45%**	**153,798.42**
P6 PATRAS	**Total Person-month**	**12.5**	**6**	**0**	**6**	**48.00%**	**6.5**
	Perso.*	130,000.00	61,286.40	0.00	61,286.40	47.14%	68,713.60
	Travel*	19,200.00	5,407.22	0.00	5,407.22	28.16%	13,792.78
	Total	**149,200.00**	**66,693.62**	**0.00**	**66,693.62**	**44.70%**	**82,506.38**

* including share of indirect costs

COST/BUDGET FOLLOW-UP TABLE					*) total budget figures - not EC funding		
Contract N°:	**258617**	**Acronym: ActionPlanT**			**Date:**	**28.07.2011**	
PARTIC.	**TYPE of EXPEND- ITURE**	**BUDGET**	**ACTUAL COSTS (EUR)**			**Pct. spent**	**Remaining Budget (EUR)**
			Period 1	**Period 2**	**Total**	**Total**	
		e	a	b	e1	e1/e	e-e1
P7 POLIMI	**Total Person-month**	**23**	**6**	**0**	**6**	**26.09%**	**17**
	Perso.*	232,913.08	30,456.87	0.00	30,456.87	13.08%	202,456.21
	Travel*	17,137.42	6,155.85	0.00	6,155.85	35.92%	10,981.57
	Total	**250,050.50**	**36,612.72**	**0.00**	**36,612.72**	**14.64%**	**213,437.78**
P8 AGORIA	**Total Person-month**	**10.5**	**3.58**	**0**	**3.58**	**34.10%**	**6.92**
	Perso.*	89,250.00	38,715.27	0.00	38,715.27	43.38%	50,534.73
	Access	0.00	2,112.44	0.00	2,112.44	0.00%	-2,112.44
	Consum.*	0.00	277.51	0.00	277.51	0.00%	-277.51
	Other*	0.00	1,830.25	0.00	1,830.25	0.00%	-1,830.25
	Travel*	12,000.00	1,728.65	0.00	1,728.65	14.41%	10,271.35
	Total	**101,250.00**	**44,664.12**	**0.00**	**44,664.12**	**44.11%**	**56,585.88**

* including share of indirect costs

WP	Activity Type	Item description	Amount	Explanations
WP 2	COOR	Personnel Costs	52,798.00 €	Coordination Activities
WP 6	MGNT	Personnel Costs	19,776.00 €	Management
WP 6	MGNT	Subcontracting	61,078.00 €	Subcontracting
WP 2, WP 6	COOR, MGNT	Remaining direct costs	15,253.00 €	Other Direct Costs - Coordination, Other Direct Costs - Management
	COOR	Indirect Costs	3,696.00 €	
	MGNT	Indirect Costs	1,384.00 €	
		TOTAL COSTS AS CLAIMED ON FORM C	**153,985.00 €**	

Table 24 - Personnel, Subcontracting and other major cost items for SAP for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 1, WP 3, WP 4	COOR	Personnel Costs	65,530.29 €	Personnel Costs
WP 5	COOR	Personnel Costs	10,786.38 €	Personnel Costs
WP 2	COOR	Personnel Costs	13,482.98 €	
WP 1, WP 3, WP 4	COOR	Travel and Subsistence	5,607.00 €	Travel Costs
	COOR	Indirect Costs	79,694.92 €	
		TOTAL COSTS AS CLAIMED ON FORM C	**175,101.57 €**	

Table 25 - Personnel, Subcontracting and other major cost items for IPK for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 4, WP 3	COOR	Personnel Costs	67,563.54 €	Salaries for researchers (2 post docs + 2 PhD)
WP 4	COOR	Travel and Subsistence	7,173.79 €	Travels 4 people of these workshops
WP 4	COOR	Consumables	20.76 €	Internet connection
	COOR	Indirect Costs	44,854.85 €	Special Transition Flat Rate (60%)
		TOTAL COSTS AS CLAIMED ON FORM C	**119,612.94 €**	

Table 26 - Personnel, Subcontracting and other major cost items for EPFL for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 1, WP 2, WP 3, WP 4	COOR	Personnel Costs	49,519.01 €	
WP 1, WP 3	COOR	Travel and Subsistence	4,819.01 €	

	COOR	Indirect Costs	45,271.51 €	
		TOTAL COSTS AS CLAIMED ON FORM C	**99,609.53 €**	

Table 27 - Personnel, Subcontracting and other major cost items for FTK for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 2	COOR	Personnel Costs	59,757.50 €	Personnel Cost (5.83 person months x hypothetical monthly personnel cost!!!)
WP 4	COOR	Personnel Costs	16,400.00 €	Personnel Cost (1.6 person months x hypothetical monthly personnel cost!!!)
WP 2	COOR	Travel and Subsistence	477.30 €	Kick-off travel, hotel & accommodation (Hadrien Szigeti)
WP 2	COOR	Travel and Subsistence	422.55 €	Brussels meeting travel and accommodation (Hadrien Szigeti)
WP 4	COOR	Travel and Subsistence	1,238.10 €	Dresden workshop travel, hotel & accommodation (Hadrien Szigeti + Helène Riba)
WP 2	COOR	Subcontracting	28,854.83 €	UTC Subcontracting from November 2010 to June 2011
WP 2	COOR	Other Specific Costs	2,436.75 €	PR Invoice
WP 2	COOR	Consumables	9.95 €	Consumables Documentation for STEEP report
	COOR	Indirect Costs	16,148.43 €	Standard Flat Rate (20%)
		TOTAL COSTS AS CLAIMED ON FORM C	**125,745.41 €**	

Table 28 - Personnel, Subcontracting and other major cost items for IC for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 4	COOR	Personnel Costs	33,075.00 €	5,25 PMs in WP4
WP 5	COOR	Personnel Costs	5,229.00 €	0,75 PMs in WP5
WP 4	COOR	Travel and Subsistence	3,379.51 €	Trips
	COOR	Indirect Costs	25,010.11 €	Special Transition Flat Rate (60%)
		TOTAL COSTS AS CLAIMED ON FORM C	**66,693.62 €**	

Table 29 - Personnel, Subcontracting and other major cost items for PATRAS for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 3	COOR	Personnel Costs	20,027.56 €	
WP 3	COOR	Travel and Subsistence	4,047.91 €	Travel and fees of the conferences
	COOR	Indirect Costs	12,537.25 €	
		TOTAL COSTS AS CLAIMED ON FORM C	**36,612.72 €**	

Table 30 - Personnel, Subcontracting and other major cost items for POLIMI for the Period

WP	Activity Type	Item description	Amount	Explanations
WP 4, WP 5	COOR	Personnel Costs	32,262.72 €	
WP 5	COOR	Travel and Subsistence	1,440.54 €	Berlin, Dresden
WP 5	COOR	Other Specific Costs	1,525.21 €	Meeting facilities
WP 5	COOR	Consumables	231.26 €	Printing
WP 6	MGNT	Access Costs	2,112.44 €	
	COOR	Indirect Costs	7,091.95 €	Standard Flat Rate (20%)
		TOTAL COSTS AS CLAIMED ON FORM C	**44,664.12 €**	

Table 31 - Personnel, Subcontracting and other major cost items for AGORIA for the Period

6. Financial Statements - Form C and Summary Financial Report

7. Certificates

Beneficiary Number	Beneficiary short name	Certificate on the financial statements provided?	Any useful comment, in particular if a certificate is not provided
1 (CO)	SAP	No	CFS not required in Year 1 (funding below threshold)
2	IPK	No	CFS not required
3	EPFL	No	CFS not required
4	FTK	No	CFS not required
5	IC	No	CFS not required
6	PATRAS	No	CFS not required
7	POLIMI	No	CFS not required
8	AGORIA	No	CFS not required

Beneficiary Number	Beneficiary short name	Certificate on the methodology provided?	Any useful comment, in particular if a certificate is not provided
1 (CO)	SAP	No	
2	IPK	No	
3	EPFL	No	
4	FTK	No	
5	IC	No	
6	PATRAS	No	
7	POLIMI	No	
8	AGORIA	No	