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INTERNSHIP REPORT

IMPLEMENTATION OF A PROJECT MONITORING TOOL

5TH OF MARCH OF 2018



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Abstract

To complete his school path, an engineering student must carry out a final internship. Following a master in nuclear engineering, it was obvious for me to perform my internship in a nuclear specialized company. I chose an internship with the subject "Implementing a project monitoring tool" in the ASSYSTEM E&OS company because it allowed me having a global vision of the activities of the all technical studies department and not only focus on the specificities of a single technical subject. In a context of growing need of efficiency and reliability, the companies and more specifically the nuclear specialized ones are now using project-monitoring tools to ensure the on time delivery of their works, their quality and the control of their costs. Following these objectives, ASSYSTEM E&OS decided to implement the ORACLE's solution: PRIMAVERA. My mission consisted in being the bridge between the operation realization team and the pilot unit in Tours both in the technical and change management aspects.

As for any job, my first task was to understand the specificities of the company and master the tools that were to be implemented. Moreover, I had to be also formed to the project management by learning the PMBoK (Project Monitoring Book of Knowledge) in order to be more aware of the major tasks performed by the management teams. Following this first step, I tackled a second one of configuration of the tool where it was paramount to understand the needs of the teams and decide which projects where in the scope of the pilot phase. The last, but not the least, part of my job was to carry out the pilot project. Because of the dates of my internship, I could not follow the pilot until the end, but a new trainee will continuemy job. As a relay between the implementation team and the pilot one I continuously needed to accompany the change process and help in the technical appropriation the different teams and project manager while improving my skills and sharing the results with my tutor and the implementation team. It helped developing my listening skills to the needs and my adaptability to any situation including the troubled ones.

Besides the skills that the internship brought me, it constitutes one of my first experience in work. This latter brought me to the conclusion that I want to begin my career with the project management. Therefore, I will follow my work in the ASSYSTEM E&OS Company as the local administrator of the PRIMAVERA solution in the Tours' agency. This job will allow me to continue my internship labor and I expect that it brings me to the successful accomplishment of the implementation of the PRIMAVERA solution.

Key notions

- Project-monitoring
- Schedule
- Nuclear
- Change management
- Resource Management
- PRIMAVERA P6
- PRIMAVERA Team Member

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1. Introduction

To achieve the finalization of his school path, an engineering student must accomplish a final internship. This final internship must last between 5 and 6 months. This quite long duration has different purposes. First, to allow the student to be integrated into teams of engineers and carry out a real professional project. Indeed, with shorter internships as we can have done previously, the time spent acquiring the technical and environmental specificities of the company can be longer than the real working time. Moreover, this amount of time appears for the company as the right duration to assess the abilities of the student and train him in order to eventually hire him. The major challenge for the students remains to put into practice the theoretical knowledge acquired all along the studying years and develop new specific skills.

Furthermore, the student must analyze the different aspects of the engineering work both technical and relational. Indeed, an engineer not only must master the technical specificities of his job but also develop his relational skills to be able to work inside a team and after some time manage one. It is not always easy to understand and master a technical subject, but we can learn it and we have done it all along our school path. However, even if we have made many group projects, it is only in immersion in a company that we can understand all the hierarchical and relational constraints that are present in a professional environment. Analyzing these specificities must also be a major concern of the student during its internship and will be his first step of integration in its professional life.

For my part, as I am following a nuclear engineering master, the topic of my internship must be related with the nuclear field. However, I did not want to just be focused on a single technical subject. Therefore, I chose to carry out my internship in the project monitoring field, in a nuclear specialized company, ASSYSTEM E&OS. More precisely the goal of my internship is to implement a project monitoring tool, several software from ORACLE company including PRIMAVERA P6, in the Tours' department of technical studies of the company. This position allows me to look upon a great variety of projects and work with the different teams of the agency. I am thus integrated both in the technical part of the project and in the change management. In addition, the duration of the project is more or less fitting with the duration of my internship, which allows me to follow and have an action in the project from the beginning until the end. This is an exceptional opportunity to be part of an important project without being under a great pressure. Therefore, it is very important for me to see this internship as the first step of the professional career. The analysis in depth of what I like to accomplish and not, will help me to choose the fittest future path.

2. The host company

ASSYSTEM E&OS (Engineering and Operation Services) is an independent engineering company specialized in engineering counseling. Preferred partner of several of the biggest industrial groups of the world and especially in Europe, ASSYSTEM's favorite areas are the conception and development of services products like engineering deliverables but not only. They can also act as project managers on industrial projects in a wide range of fields.

2.1. Description of ASSYSTEM E&OS

Historically created in 1966 under the name ATEM, the company's activity focused on the commissioning of industrial units, especially the commissioning of nuclear power plants. The initial growth of ATEM was thus due to the investments in the nuclear field of the French government after the first oil shock of 1973. In order to continue the process of growth, the company diversified its activities in the project monitoring since 1981, in the computing tools since 1989, etc... The fusion between ATEM and ALPHATEM (subsidiary company of COGEMA, nuclear specialist company) resulted in the birth of ASSYSTEM, as it is known today. The company was introduced in the stock market in 1995.

ASSYSTEM, directed by Stéphane AUBARBIER, employed in 2017 more than 12,200 workers, engineers for most of them, all around the world with offices in 20 different countries. The wild spreading of ASSYSTEM is shown in the *figure 1* below. In 2016, the company achieved a turnover of 955 million euros with a sectorial repartition that we can see in the *figure 2* below. The diversification of ASSYSTEM's activities was a fundamental decision for explaining the rise of the company that we know today.



Figure 1: Countries where ASSYSTEM is present in 2017

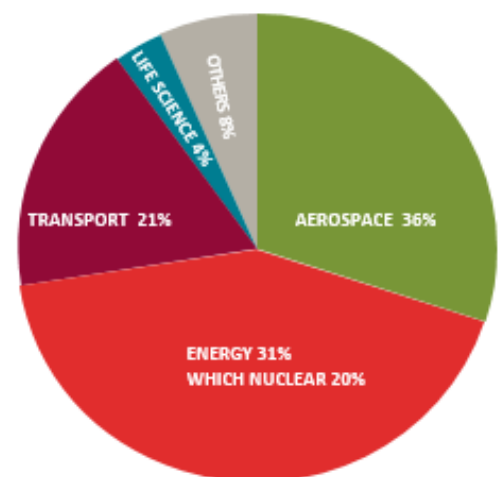


Figure 2: Main activities of ASSYSTEM in 2016

The internal decomposition of ASSYSTEM is done in so called Business Units (BU), which are linked to a specific activity field. For instance, the BU, which has the highest weight in economic terms, is the nuclear one. The division between several Business Units has the aim of being as fit as possible

according to the demands of clients. Indeed, every client, depending on its field of activity has different requirements on the projects and deliverables. To give them this flexibility ASSYSTEM has been divided in those BU which can be seen as poles of the company. Every agencies worldwide depends of a BU. For instance, the agency that is located at Tours, where I was hired for my internship, is one of the agencies of the nuclear BU.

2.2. Description of global ASSYSTEM's activities

2.2.1. Internal politics of ASSYSTEM

The activities of the group are diversified as shown in the *figure 2*. However, in 2017 the society split in two:

- ASSYSTEM E&I (Energy and Infrastructure) which gathers the activities around the energy fields: nuclear, other energies, buildings, oil & gas, life sciences, project monitoring (see *figure 3* below)
- ASSYSTEM Technologies which gathers the activities around the transport and the aerospace

For my internship I am integrated in ASSYSTEM E&I, that is why I will focus my statements on this particular division. The aim of ASSYSTEM's politics is to have a continual growth in the nuclear field but not only. Indeed, to grow and become a top-tier plan engineering consulting company all around the world ASSYSTEM must widen its activities and clients. To achieve this aspiration, the company has invested in several fields of energy like renewables, oil and gas, infrastructures construction, but also in other fields like the life sciences and more recently in the project monitoring. The percentages of these activities in the turnover are presented in the *figure 3* below.



Figure 3: Percentage in term of turnover of the activities of ASSYSTEM E&I

2.2.2. Major contracts and clients of ASSYSTEM E&I

The major clients of ASSYSTEM E&I are major groups such as EDF (Electricité De France), ITER, "Société du Grand Paris" etc... With those companies, we can quote some of the major contract of ASSYSTEM in the previous years such as:

- With EDF, ASSYSTEM acts as a key partner and intervene in both France and England on the different nuclear power plants. The major activities of ASSYSTEM consist in: the management of the decommissioning of several plants, the design modifications and realization of those modifications, the management of the radioprotection and nuclear safety, the elaboration of safety reports, the maintenance of the systems, the tests and commissioning for new power plants etc... These contracts enter in the nuclear activity.
- With ITER (and more precisely with F4E (fusion for energy)), ASSYSTEM won seven contracts since the beginning of the project in 2005. The principal activities of those different contracts being the nuclear safety, the design of several elements such as the remote control of the divertors, the management of the construction and the procurement or even the commissioning of the buildings. These contracts enter in the nuclear and other energies activities.
- With the "Société du Grand Paris", ASSYSTEM (leading PROXEMYS consortium) was chosen to monitor the construction of new stations for Paris' subway. More precisely PROXEMYS was selected to develop and optimize computing tools of document management, ensure the environmental sustainability, the spreading of the knowledge over engineering systems and in management of complex projects. These contracts enter in the Industry and others activities.
- With the Saudi royalty, ASSYSTEM was chosen to finish all the design studies for Jubail Industrial City, to carry out the executions studies, make a technical synthesis report. This contract is an example of the infrastructure BU.

Finally, I wanted to come back on one of the specificity of the company: the continuous formation of its employees thanks to seven internal institutes. These latter focusing on the major works of the society such as the:

- Aerospace institute: it trains in the subjects of products, methods, specific tools of the company and the major customers in Aerospace.
- Automotive institute: it trains in the subjects of development of products and systems, the customer service...
- Project management institute: it gathers the knowledge of all the ASSYSTEM's project managers around the world and try to widespread the good practices of the art.
- Nuclear institute: it serves as discussion platform between recently graduated engineers and experimented ones.

2.3. *The agency of Tours*

The agency of Tours is part of the nuclear business unit, which is the main reason of my will to work in that agency. Since its creation in 2000, the main activities of this agency are the production of engineering deliverable documents for the CNEPE (Centre National d'Équipement de Production d'Énergie), subsidiary company of EDF which is in charge of the conventional part of the nuclear power plants. Moreover, the other main purpose of ASSYSTEM is to help ensuring the project management of the CNEPE's activities. To do so the agency and its 100 collaborators is divided in two great activities: project management on one hand and consultancy studies on the other hand. This consultancy work includes both existing power plant of generation II and EPRs (European Pressurized Reactors) of generation III+, which are being built in Flamanville, FRANCE (FLA 3), in Hinkley Point, England (HPC) and in Sizewell, England.

To be as fitted as possible for those activities, the agency is divided in several technical groups such as mechanics, safety, maintenance, electricity, and commissioning or project management. For every division a responsible monitors a team composed by 10 to 30 collaborators (engineers and technicians). Project managers dedicated, whether to generation II power plants or EPRs, request the help of these team leaders in order to efficiently monitor all the projects. Of course, at the top of the agency we can find a Branch Manager, Cédric SCHREIBER. All this organization is summarized by the figure 4 below.

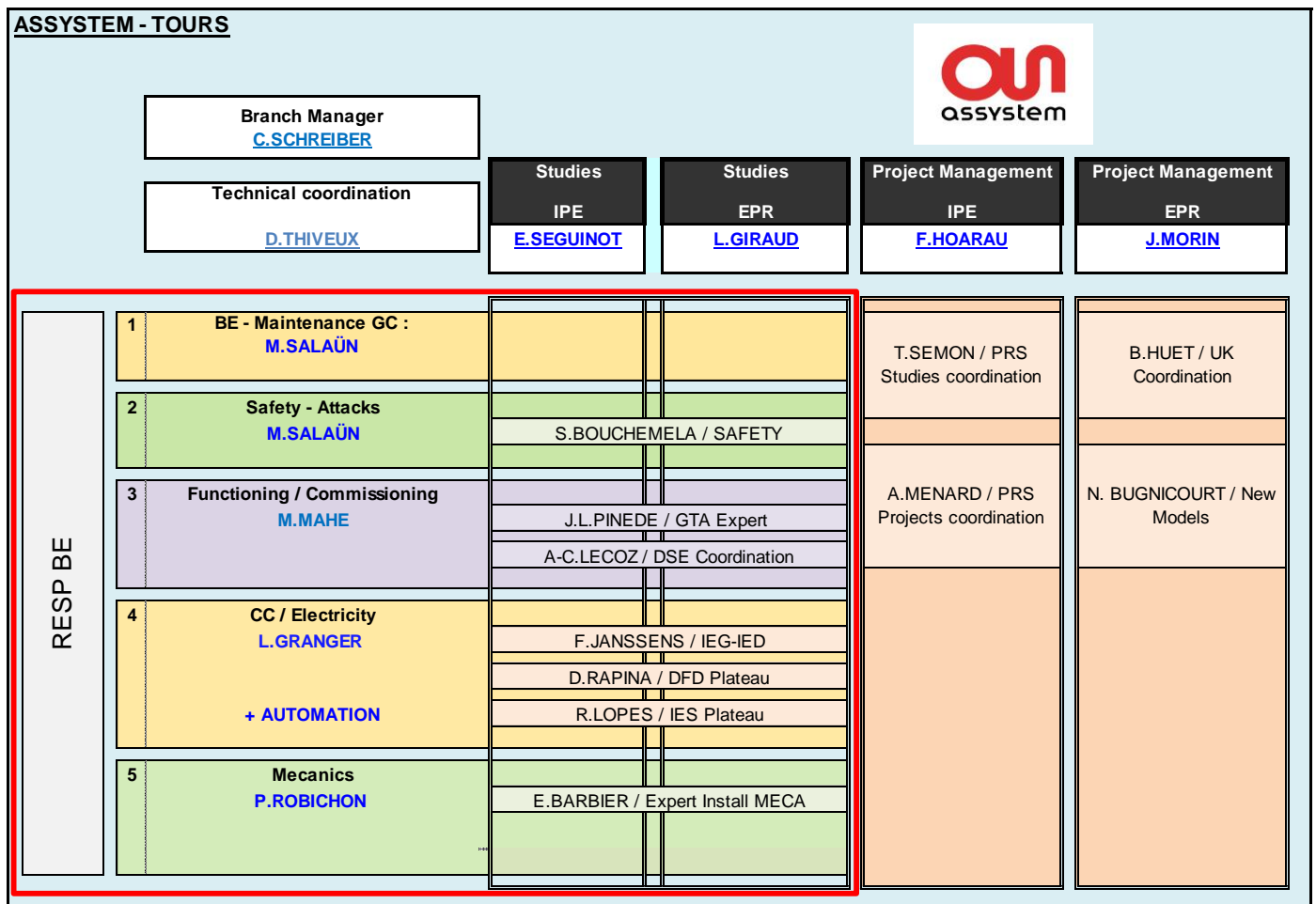


Figure 4: Organization of the agency of Tours

For my part during my internship, I was attached to the project management unit, under the authority of Jérémie MORIN, project manager for the new nuclear. He was the person in charge of the pilot project in Tours' agency and thus the person with who I worked most. In addition, in order to have a better view of the functioning of the different projects I spent time with every team leaders and project managers. Those meetings were fundamental for me in order to understand the expectations of the workers and to adapt the settings of the different software to their needs as far as possible. Those meetings were besides great opportunities to assess the quality of the changing of processes that we intended to make.

3. Presentation and analysis of the work accomplished during the internship

My internship was sequenced into several main steps:

- Learning what is the project management and master the three software of PRIMAVERA solution: PRIMAVERA P6, Team Member and UNIFIER which are complementary in the need of project monitoring.
- Understanding and clarifying the requirements of the agency toward the tools and setup the latter.
- Deploy the tools for the pilot project and make sure that everybody is involved in the process of change of the practices and see the interest of the tools.

Following those three main points the different parts that followed are focusing on my personal job, knowledge that I have acquired and problems that I may have faced and the means that I deployed to solve them. In addition to summarize all the activities that I have made during the internship and their serialization and to show a quick view of the functionalities of PRIMAVERA P6, I have created a schedule of my internship on PRIMAVERA P6. One can see this figure in the *Annex 1*.

3.1. Project management learning and PRIMAVERA software mastering

Before anything else, as for every project, I started by a period of transition where I needed to learn how operated the enterprise. In addition, as I had only a little knowledge on the project management I also needed to deepen my basics. The following part presents this learning. After this explanation, the report will focused on the work on the project itself.

3.1.1. Integration in the ASSYSTEM's team and understanding of the project management

During the week following my integration in the company, I benefited of something very unusual for an internship: I participated to an integration week which purpose was to introduce to the new hired employees the main problematics of the project management and their importance in the ASSYSTEM E&OS company. This week was the first step for me to understand the spirit of the company and the main aspects of the project monitoring. Following this week, I had also the luck to have access to great tools: the PMBok, which is the reference for the methodology of the project management all around the world, and the ASSYSTEM PM (Project Management) Handbook, which is the PMBok adaptation inside ASSYSTEM for instance. I really appreciated this event insofar as it permitted me to acquire the compulsory knowledge to start my internship and more broadly a job in project management. It took me another two weeks to read the entire documents and others like PMPs (Project Management Plan) in order to understand the main aspects of the project management, which are the project monitoring, the cost control, the quality management and the resource management.

Of course, my search of learning and the growth of my knowledge was continuous all along the pilot project. However, as the internship progressed I had less time to study because I spent more

time in the action. It appeared to me that during my formation a really few notions of project management were taught whereas this discipline has become fundamental in a great number of companies. Maybe it's a trail that has to be deepened to improve the contents of the engineering school courses.

3.1.2. Presentation of the PRIMAVERA's software and deployment in ASSYSTEM E&OS

For the project management, workers are using scheduling and monitoring software to facilitate their daily lives. ASSYSTEM E&OS chose to implement the solution from ORACLE, PRIMAVERA. Between the two world leaders in the field of project monitoring software PLANISWARE and PRIMAVERA, ASSYSTEM chose the second solution to match the solutions used by its principal clients such as EDF.

Four software composes the PRIMAVERA solution selected by ASSYSTEM:

- PRIMAVERA P6, a quite complete software for the scheduling of a portfolio of projects and the resources management. This is the first software that I have studied and the first to be implemented in the different pilot projects as we can see in the *figure 5* after. The goal being to plan the major part of the Portfolio of the intern affaires in the three pilot projects. There are two ways of accessing the software: directly on the computer itself by the version "P6 pro" and online by the version "P6 online". The two being interconnected when there is an internet connection available.
- Team Member, a web interface for all the collaborators of the projects. It is a complement of PRIMAVERA P6 as far as it permits the collaborator to register its progression on his different allocated tasks. By consolidating these information, it becomes easy to determine the percentage of completion of every affaires and the related EVM (Earned Value Management) indicators.
- UNIFIER, a web software that aims to follow the contracts and the different deliverables. This software can also work as a document manager but this function will not be implemented in the pilots. I did not spend a lot of time on this software according to his late implementation (at the beginning of March 2018).
- BI Publisher, a web software that works in complement with PRIMAVERA P6 and UNIFIER. Its main goal being the summarization and compilation of the different information by the creation of graphics and reports especially for on time and on quality delivery. As for UNIFIER I couldn't work a lot on this software because of its late implementation in the pilot.

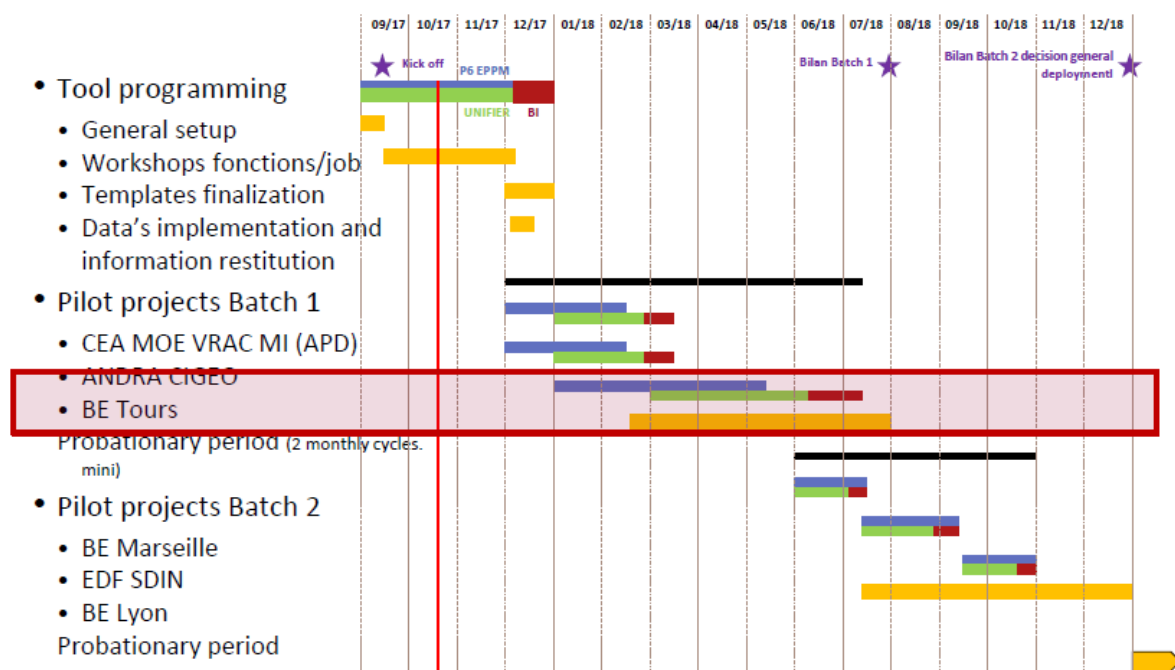


Figure 5: Schedule of the deployment of the PRIMAVERA's solution

My further analyses will therefore be more focused on both PRIMAVERA P6 and Team Member that I have closely helped to put in place in the Tours' pilot project. The next trainee will be in charge of the implementation of UNIFIER and I hope that I will help him in his task at the beginning of my job. Indeed, after my internship I will stay as an employee in Tours' agency with the first aim of continuing this pilot project and successfully carrying it out.

3.2. Understanding the needs and setup of the tools

As we can see in the figure 5 above, before the implementation of the solution in the pilot projects, there is a phase of tool programming which contains a general set-up, several workshops and the realization of templates. The first action that we have made is to create a document summarizing the needs of the different agencies and in particular, Tours' one.

3.2.1. Creation of the list of requirements and communication tools

Before every project start, a list of requirements must be defined. Indeed, if it is not done from the beginning, it can cause major disorders when it comes to the pilot phase. However, this work was not clearly done by the enterprise when I joined the project. Then we decided with my tutor, Jérémie MORIN, to make this list. It took us a long time but it was very useful to establish a perfect knowledge of the scope. Of course, the establishment of such a list was not a job that we could do alone. We organized several meetings with the different project managers and team leaders of the agency in order to summarize all their needs and expectations. Indeed, to successfully implement a new tool, a change management must be put into action. Part of this management is to involve every leader to prove that the change is for the best even if the beginning can be difficult. This difficulty often comes from the change of habits. Every worker has progressively built his own tools. Therefore when a standardization of the tools comes, a feeling of uselessness appears. The implication in the process of

change is thus primordial. I found out that in the agency of Tours, the workers were not reluctant to change but during the different meetings a need of added value was predominant.

After several weeks, the requirement list was over and was used as a basis for the work to be done by the implementation team. One can see this list in its last version at the end of this report, in the *annex 2*. During several workshops that were performed in collaboration with the agency of Marseilles and the implementation team, we have been able to modify some functions and add others to the requirement list in order to be prepared best as we could for the pilot phase. Of course, some needs were missing or others ill formulated but the time lost to reprocess the list was negligible before the time we would have spent if we had not prepared this document.

Meanwhile the creation of the list, in order to show what could be the new processes once the software are implemented, I created two new documents. First, a timeline representing the new planning process. This timeline is very important because it underlines the different moments where an error can occur and the way to prevent them. On the other hand, it also serves as a methodological reference, which can be consulted at any time. Of course, the document that I made is just a draft model, which is being reprocessed, yet it was important to initiate its creation. One can see this timeline in the *annex 5.2*. Furthermore, in a projection state of mind I also created, before the launching of the pilot, a presentation that summarized at the different points of a project (offer, realization...) the usefulness of the PRIMAVERA P6 and Team Member software and the way to use them. Even if a document like this one was hard to create because it involved a projection, it revealed its usefulness in the way that we have been able thanks to it to forecast some prospective problems and for me to anticipate the preparation work that I had to carry out.

3.2.2. Setup of the different softwares

As I mentioned in the previous part, several workshops were organized in order to procure to the implementation team, the different data and input to setup the tools. Indeed, the software required a programming to fit with the specificities of the company. As a relay between the agency of Tours and the implementation team, part of my job was to collect information on the structure of the enterprise (different abilities of the workers, level of responsibility...) to create on PRIMAVERA P6 a structure of roles which is a categorization of the different workers very useful for scheduling in an offer phase. As for the software PRIMAVERA P6 and Team Member the major of the programming is already done, the job for me was to understand the different functions and run a bunch of test to make sure the fact that the different requirements were satisfied. This work implied a common action with the implementation team who mastered the software. One of the major issue I faced was to succeed the accommodation with everybody's schedule and find moments for meeting in order to ensure that all the stakeholders of the project agreed on the different documents.

For UNIFIER and BI Publisher, which are more flexible, a special programming needed to be carried out. However, according to the time required to master those software and their late implementation in the pilot, I was not taught to program but only to use them. Yet I worked on the setup of those devices in other ways. For instance, I helped reviewing all the UNIFIER's business processes and made sure that they fitted with the functioning of the agency. As for BI publisher, which is dedicated to the establishment of indicators and more generally to the conception of reporting figures, I summarized the information that were required for all the project manager and team leaders.

Of course, the setups made before the pilot phase had to be modified during the pilot projects because new issues had appeared. To make those changes following a methodological way, I prepared also a “receiving matrix” which summarized the expected functions according to the types of users. One can see this matrix in the *annex 3*. The main goal was to ensure the good functioning of the software according to the needs and formulate observations to improve them when it is required. This document was useful for both the implementation team because it summarized the work to carry out in the future, and for the agency because it helped bring closer the processes and the expectations.

3.3. *The pilot project in Tours’ agency*

The principal reason for the creation of my internship was to help the teams during the pilot project in Tours’ agency and to be a relay between the local collaborators and the implementation team. First, I will talk about the ultimate part of the preparation for the pilot and after I will detail the accomplished job during this leading phase.

3.3.1. Preparation phase for the pilot project

The pilot project in the agency of Tours is focused on the scheduling and the management of the activities of the type “technical studies”. In order to create an added value for every team and involve the major part of the collaborators we carefully chose the activities added to the pilot and make different batches to smooth the workload all along the pilot phase. We also needed to prepare the different templates of schedules and the information upon the different workers to be ready to start from the kick-off.

In addition, I had the opportunity of working before the pilot project with one of the team leaders, Marc SALAÜN, to elaborate two schedules for two different affairs. This work has been more than useful for me to face the difficulties caused by the real projects, such as the deadlines and the time to allocate to the preparation in comparison to the benefit. Moreover, it has been the opportunity of developing an excel Tool which permitted the automatic extraction of the schedules’ information, in particular the affectation of the resources and the allocated costs that we can easily obtain. This tool permits the team leaders and the project manager automatically filling the cost effectiveness analysis in order to avoid a double entrance of the information. It was also a good opportunity for me to make a programming exercise and improve my skills in this field.

During this preparation phase, we also created a forecast of the progress of the different scheduling batches in time and a clear definition of the projects included in these batches. One can see this forecast progression in the *figures 7 and 8* below. Following those expectations of timeline, I progressively scheduled all the projects of technical studies type even if sometimes the progression was slowed by exterior factors. The precise description of the tasks during the batches will be explained in the two following parts.

| What ? | Who ? | January | February | March | April | May |
|-----------------------------------|------------------------------------|---------|----------|-------|-------|-----|
| Training | Planner + PMs + RGM | | | | | |
| Kick-off | Planner + PMs + RGM | | | | | |
| Creation of the schedules BATCH 1 | Planner + PMs + concerned RGM | | | | | |
| Creation of the schedules BATCH 2 | Planner + PMs + concerned RGM | | | | | |
| Creation of the schedules BATCH 3 | Planner + PMs + concerned RGM | | | | | |
| Creation of the schedules BATCH 4 | Planner + PMs + concerned RGM | | | | | |
| Cycles of schedules updating | Planner + PMs + RGM + Team Members | | | | | |

Figure 6 : Forecast scheduling of the different projects

| BATCH 1 | | | | | | | |
|---------|----------------|-----------------|------------------------|------------|------------|---------|-----------------|
| SOP | Resp.Proj. | Project | Description | Start | End | Mnt CDE | RGM in charge |
| 02013 | SEGUINOT, ERIC | 73646 | Etude thermique CCL | 13/11/2017 | 31/05/2018 | | Pierre ROBICHON |
| 02013 | GIRAUD, LIONEL | 74445 | MISTUB SIZEWELL | 20/12/2017 | 28/02/2018 | | Marc SALAÜN |
| 02013 | GIRAUD, LIONEL | OFFRE | Firestudies 2018 | 01/02/2018 | 31/12/2018 | | Marc SALAÜN |
| 02013 | SEGUINOT, ERIC | OFFER : Waiting | Vérif support VD3 | 29/01/2018 | 31/05/2018 | | Pierre ROBICHON |
| 02013 | SEGUINOT, ERIC | OFFER : Lost | Etude ATEX | 08/01/2018 | - | | Marc SALAÜN |
| 02013 | SEGUINOT, ERIC | OFFER : Lost | MAJ Jalon J6 incendie | 08/01/2018 | - | | Marc SALAÜN |
| 02013 | SEGUINOT, ERIC | 74763 | MAJ DES EOC | 01/02/2018 | 31/07/2018 | | Mathieu MAHE |
| 02013 | GIRAUD, LIONEL | 72439 | Appui systèmes HPC | 01/02/2018 | 01/02/2019 | | Mathieu MAHE |
| 2013 | SEGUINOT, ERIC | OFFER : Waiting | MAJ risques inondation | 01/03/2018 | | | Marc SALAÜN |

| BATCH 2 | | | | | | | |
|---------|----------------|----------|-------------------------------|------------|------------|---------|-----------------|
| SOP | Resp.Proj. | Project | Description | Start | End | Mnt CDE | RGM in charge |
| 02013 | GIRAUD, LIONEL | 00072869 | ETUDE AGRESSIONS UK LOT 1 & 2 | 01/08/2017 | 31/12/2018 | | Marc SALAÜN |
| 02013 | GIRAUD, LIONEL | 73330 | DETU/CIS/UK/DFD GE | 01/09/2017 | 31/12/2018 | | Ludovic GRANGER |
| 02013 | SEGUINOT, ERIC | 70184 | DSE PPR PEE SEG tous sites | 01/02/2017 | 31/07/2019 | | Mathieu MAHE |

| BATCH 3 | | | | | | | |
|---------|-----------------|--------------------|--------------------------------|------------|------------|---------|-----------------|
| SOP | Resp.Proj. | Project | Description | Start | End | Mnt CDE | RGM in charge |
| 02013 | HOARAU, FLORENT | 00067898 | PILOTAGE IES NOG | 21/09/2016 | 31/12/2018 | | Thibault SEMON |
| 02013 | SEGUINOT, ERIC | 00071208 | CALCUL FORFAIT GRAND CHAUD N°7 | 01/03/2017 | 31/12/2018 | | Pierre ROBICHON |
| 2013 | HOARAU, FLORENT | 72035 continuation | Etude pôle PRS | 01/04/2018 | 31/12/2018 | | Thibault SEMON |

| BATCH 4 | | | | | | | |
|---------|----------------|----------|-------------------------------|------------|------------|---------|-----------------|
| SOP | Resp.Proj. | Project | Description | Start | End | Mnt CDE | RGM in charge |
| 02013 | GIRAUD, LIONEL | 00068710 | UK - PLATEAU DFD | 02/01/2017 | 31/03/2022 | | Ludovic GRANGER |
| 2013 | SEGUINOT, ERIC | 67981 | NAA DDS | | | | Marc SALAÜN |
| 02013 | SEGUINOT, ERIC | 00067081 | BPU Réalisation SCCD | 01/09/2016 | 31/12/2019 | | Ludovic GRANGER |
| 02013 | SEGUINOT, ERIC | 00073011 | SMNGC A V T SCHEMAS ELEC MECA | 01/09/2017 | 31/03/2018 | | Ludovic GRANGER |
| 02013 | SEGUINOT, ERIC | 00062829 | PEE Source Froide | 15/11/2015 | 30/06/2025 | | Mathieu MAHE |


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Figure 7 : Information upon the projects of the different batches

3.3.2. First phase of the pilot project: Batch 1

After the programming phase, we started at the beginning of January 2018 with the scheduling of the projects from the Batch 1 that we can see in the *figure 8* before. We chose in this batch to integrate projects that seemed to be quite easy to plan and the ones that were in a rush. With this batch, I also started to work closely with two of the team leaders in order to integrate them as much as possible to the scheduling process. I was positively surprised of their reaction and the time they granted me to help my progresses. The scheduling of this batch was a starting point for the establishment of a precise methodology. Indeed, when I began to create schedules in order to represent the projects progresses I quickly understand I should standardize all the projects' representation in order to be able in order to easily maintain the portfolio. Moreover, I started the writing of a "Good practices handbook" for the creation of the different schedules. This handbook has been ended at the beginning of the batch 3 but I tried as much as possible to respect these rules in the first schedules (and if I did not, I updated every projects when the rules were established). One can see in the *annex 4* the summary of the good practices that I used as a communication tool.

The specificity of this batch resided in the fact that the team leaders and the project managers had not received the course upon PRIMAVERA P6. I was thus the only one with a relatively good knowledge of the tool. This situation led to the fact that I needed to schedule in their integrality the schedules of level 2 and 3 without the handling people able to correct me. I spent then a lot of time with them creating and updating the different schedules. Moreover, the software Team Member being forecast to be implemented in a second time, I had to collect the advancement of the different deliverables alongside the collaborators. The schedules of this batch were quite short. The majority were composed by five to fifteen deliverables, representing between 100 and 200 lines in the schedules. With the right methodology and a rigorous way of working schedules of this size were no problem at all to conceive.

At the end of the batch took place the PRIMAVERA course for the team leaders and the project managers. The preparation of this course required the establishment of a methodological handbook and a user guide. The implementation team was in charge of the writing of these documents and I reviewed it before the course to make sure the contents met the requirement list that we created before. All the documents were good enough and the course was successfully achieved. However, major rapidity problem of the different tools appeared which represented an impossible hurdle to overcome. Those problems were concentrated on the Web interface of PRIMAVERA (both for the software P6 and Team Member) delaying the GO decision for both software. I then had to work on my local database in order not to take delay in the scheduling of the projects but the use of Team Member was impossible during quite a long while. Those problems were ORACLE's responsibility and were solved later during the Batch 2.

3.3.3. Following of the pilot phase: Batches 2 and 3

After this event of delaying the "GO" decision, I followed the scheduling of projects with the Batch 2. With this batch appeared projects more difficult, with more deliverables and often already begun. From this batch on the length of the schedules significantly increased and could reach near 1000 lines. It was then paramount to follow a clear methodology without deviation and check every line carefully. It was however more difficult to schedule those projects because a good reporting of the progress of every deliverables is required if you intend to effectively represent the project. Moreover, we chose the projects belonging to this Batch 2 in order to work with every team leaders and include them in the process of change. For these reasons it was more difficult to schedule the projects of this batch but it was eventually done except for the project "DETU/CIS/UK/DFD GE". This project had the specificity of being already scheduled and its adaptation to the methodology of the pilot project would take a lot of time for the team leader and the project manager, time they could not spare on February. We thus postpone the integration to the pilot of this project and then focused on the Batch 3.

At the end of the Batch 2, the rapidity problems were solved by ORACLE and all tools became again usable. I then ran several tests between the Batches 2 and 3 to check if the projects that I scheduled on my internal database could be uploaded in the global database. After some minor modifications and a standardization required by the implementation team (especially in the IDs naming, the activities and projects codes...), I could upload every schedules on the global database. This uploading implied that the use of Team Member was possible and the preparation of a course to be followed by the collaborators working on the scheduled projects for Batches 1 and 2. These collaborators will be the first to follow the course and therefore the first to report their progress on

every deliverables. Before that phase I needed to actualize every projects already scheduled to simplify the task of progress reporting for the workers.

Finally, the scheduling of the Batch 3 took place at the end of February and the beginning of March following the expected timeline presented in the *figure 7*. With the finalization of the methodology after the Batch 2, the scheduling of the Batch 3 appeared to be easier even if the complexity of the projects was increasing. The only difficulty was to gather the information and have meetings with the different team leaders. The importance of this problem decreased all along the Batch because the scheduling cycle that one can see in the *annex 5.2* was being implemented and all the actors participated to the project at this step of the project. Here is raised one of the main difficulty faced all along this project: involve the different workers who mostly have no time to spend in other fields than their own. Fortunately, in the ASSYSTEM E&OS Company the workers were not reluctant to change and we succeeded the scheduling of every batches and the following of the projects through P6 and team member for at least the three first batches.

3.3.4. End of the scheduling phase with the Batch 4

At the time when I write this report, I have not schedule the projects of the Batch 4 yet. I began the scheduling of only one of these projects and faced no more difficulty. I extrapolate that at the end of my internship (16/03/2018) half the projects will be scheduled on P6 and able to be followed on Team Member.

3.4. *Other activities performed during the internship*

As I mentioned before, I had the luck of participate to a one-week formation over the themes of the project management. This was very unusual for a trainee to participate to a session like this. It was a great opportunity to meet new hired collaborators which shares the same topics of interest and make good relations for my potential future job.

I also participated to a contest named "SPARK contest" organized in partnership between the French and British biggest nuclear company for instance EDF, Rolls-Royces or ASSYSTEM E&OS. The main goal is to promote the new hired collaborators and give opportunities for their future careers. To obtain these opportunities, the contest consists in redacting a thesis on a subject related with the future of the nuclear industry. This year the subject being: "*What is the role of nuclear technology in a world of growing alternative power and digital innovation?*". I found it very interesting and being encouraged by the company I decided to launch myself. The first step being redact a sum-up of my principal ideas and after expect to be one of the chosen collaborators to continue the contest. Sadly, my work was not selected but it remains a good experience. I hope that I will have more opportunities in the future to prove my knowledge and enlighten my ideas.

4. *Inclusion of the internship in my career*

The achievement of internships during his school path must be for the student the opportunity of thinking about his future professional career on different aspects. First by discovering the enterprise's world and secondly by trying jobs that can be of interest for them. In the following paragraphs, I will present my personal feelings towards my internship and what I expect for my future career and personal life.

4.1. *The importance of the final degree internship*

To finalize my engineering studies and achieve the graduation both of my general engineering degree at École Centrale de Lyon and my master of nuclear engineering at the ETSEIB, I needed to perform a final degree internship. This internship required an engineering topic taking into account a nuclear specificity to fulfill the requirements of the nuclear engineering master. This final internship represents also an opportunity for all the students to follow the internship by a first job in the same company. Of course, the later represents for both students and enterprises, a positive step. Indeed, for the student it is the opportunity to get a job. It constitutes a major asset for their careers in the nowadays' economic context and for the company the internship period can be seen as a testing phase where the enterprise can reshape as its will, the new arrived worker. I wanted for my internship to come back in France not only because I missed the country but also because I wanted my hypothetical first job localized in my native country. Thereby I searched for two months an internship gathering all those aspects and more.

Of course, my research was also focused on the topic of the internship in order to find something interesting to maximize my motivation. However, I was opened to every type of engineering aspects such as the technical part (mechanics, physics...) or the project monitoring. My final choice for the internship was finally the implementation of a project monitoring tool because it allowed me to:

- Have a real objective in terms of delivery because this internship implies to follow all the steps of the project and to be sort of a warrant of the accomplishment of the project.
- Not to focus only on a technical aspect but to have an oversight of the organization and all the areas of expertise of the society.
- To be integrated in different fields of the society between technical teams, project activities and development of the tools.

The least developed aspect in my internship was the technical one. Indeed, the job of creating deliverables over a specific technical aspect, which is the basis of the engineering work, was not included in my mission. That is maybe something that misses in my school path and my short professional one and that I will maybe have to discover in the next years. The major question is now to choose on which aspect of the engineering job I will work for my first job. Indeed, I think this choice can be fundamental in terms of consequences for the first part of my career. If I do not do some technical work now it is a possibility that I will never have again the opportunity to do it again. I still got interrogations on the requirement of having done some technical work before doing a management job in order to understand the potential problems that your teams will face. However, I try not to overthink about this question because it seems to me that the most important is to seize the opportunities that are appearing to you. From what I have experienced for the moment I can say that no matter the topic of the job, if I am invested enough, everything becomes interesting. The only thing

that I really care about for my first job is to have great perspectives of evolution. Indeed, doing the same things during my entire career is not something that interests me. I want to try a bunch of things, elevate myself in the hierarchy, and reach jobs full of responsibilities. I will enter more in details in the following paragraphs.

4.2. *The opportunity proposed to me by ASSYSTEM E&OS*

As I mentioned briefly in the previous parts, ASSYSTEM E&OS and more specifically the technical studies center of Tours offered me a job at the end of my internship. This job consists first in the following of my internship. Indeed, I must carry out the pilot project for the remaining software helped by the new trainee. After this period, which must be ended by the end of July 2018, I will focus on the administration of the solution especially for helping running the cycle presented in the *annex 5.2*. Moreover, I will continue scheduling every new project won by the agency and continue the change management in order to keep on track the project.

I decided to accept this proposal. This decision was motivated by my interest for the project and my will to continue my first mission until the end. I also feel good and integrated inside the agency and I think I will be able to blossom in this context. Besides, I think that what lacks to a young engineer in general is experience. Indeed, employers want qualified workers with a great formation but they also require a minimum of experience. In this perspective, it seems fundamental for me to acquire it and what best for this than accept a good offer and work. In addition, if the job does not fulfill my requirements it is always possible to change but the experience acquired will still be mine and profitable in the future.

4.3. *Expectations for my career*

For the moment, I do not have a long-term view for my career expectations. Indeed, I have until last year always chosen a generalist path in order to not neglect any opportunity. I decided to specialize in the nuclear field by doing a master in nuclear engineering at the ETSEIB, which led me to my internship that I performed at AE&OS in the project management. Those eclectic choices have been motivated because I believe that no matter the work, when you are invested in your job, it becomes interesting. I want to experiment the greatest amount of fields to be sure that I will make the best decision.

I therefore hope that during my first years of work I will be given new opportunities to develop my skills and have more responsibilities. Finally, the last but not the least thing that I know will be important for me for the choice of my job is my personal life. Indeed, I hope that I will create a family and this will matter in my choices without I hope putting barriers. I also hope to have a quality of life especially in my living conditions. Indeed, I hope that I will stay in “small” cities to keep my private life out of turmoil that can, and will constitute my work. A mix between an interesting job and an uncorrelated private life is what I really hope for the future. However, nothing is settled and no one can forecast the future including me.

5. Conclusion

The end-of-courses internship that I carried out in the ASSYSTEM E&OS Company, under the topic “Implementation of a monitoring tool” has been very interesting and useful for improving my skills and knowledge. Indeed, that topic implied the learning of the project management theory through the reading of the PMBoK and the ASSYSTEM handbook but not only. I also needed to study the functioning of different software especially PRIMAVERA P6. Once this learning done I had the mission of being a relay between the implementation team and the teams of the pilot projects in Tours’ agency. We then needed to define the requirements toward the tools with all the stakeholders of the different pilot agencies. This phase lasted for about two months and resulted in the writing of the requirements matrix and a cycle of scheduling. Finally, I helped carrying out the pilot phase in Tours’ agency. I focused on the scheduling of the projects that we previously selected and the change management. Even if we faced a software problem that delayed the “GO” decision for both PRIMAVERA P6 and Team Member we can now use every tools without problems and I am optimistic to catch up the delay and be back on track.

The main objective of scheduling the target projects has been fulfilled. Indeed, as explained all along the report, the scheduling of the project is on time and the project monitoring is possible through both PRIMAVERA P6 and Team Member. Initially, the most feared point was a lack of adhesion of the different workers who could slow the project and threaten it. However, the change management was successful and the involvement of the different stakeholders was even better than expected. However, we must continue our efforts according to the fact that still two software are being implemented. Even if my internship is ending, the project itself is far from achieved. Tours’ agency will focus now on the implementation of the remaining software and ensure their administration in time. This first pilot phase has to be completed for the end of July, which will represent the most important milestone of the Tours’ pilot. I will now devote all my efforts for ensuring the accomplishment of the pilot project for every software in my new responsibility of local administrator of the PRIMAVERA solution for Tours’ agency.

I chose to stay in the ASSYSTEM E&OS Company for my first working experience in order to continue and carry out the implementation project. Moreover, I think it is the best place for me to begin my career, in an agency where I feel well integrated and a town that corresponds to my personal requirements. I hope that I will evolve in the company, taking more and more responsibilities. However, nobody can foresee the future and I can only expect that things will continue this good for me.

6. Bibliography

In the two following parts are notified all the reference documents that served as a basis for the different ideas and arguments presented in this report. Those documents are classified in two types: internet websites and books.

6.1. Internet websites

- [1] <https://fr.wikipedia.org/wiki/Assystem>
- [2] <https://www.thesparkcontest.org/>
- [3] <http://www.gestimum.com/actualite/erp/differentes-phases-projet-erp>
- [4] https://en.wikipedia.org/wiki/Project_management

6.2. Books of interest

- [5] "A guide to the project management body of knowledge (PMBOK guide) 5th edition", Project Management institute, 2013.
- [6] "ASSYSTEM Project Management Handbook Issue 11", ASSYSTEM company, 2012.
- [7] "P6 Professional User's Guide", ORACLE, May 2012.
- [8] "UNIFIER Users Guide", ORACLE, December 2012.

7. Annexes

In this part I reported the major part of the documents of interest that I built during my internship and that I presented all along this report. As much as possible I translated those documents from French into English but sometimes the time required was too important in comparison with the added value and I let the document in its French original version.

7.1. Annex 1: schedule of the PRIMAVERA implementation in the pilot project of Tours

I decided here to present the last version of the schedule of the work I did during my internship. It represents my best view now that I write this report of the job achieved and what remains to be done. I only represented the most meaningful activities actualized at March 01. This schedule is an example of what I did all along my pilot project in term of presentation and way of proceeding.

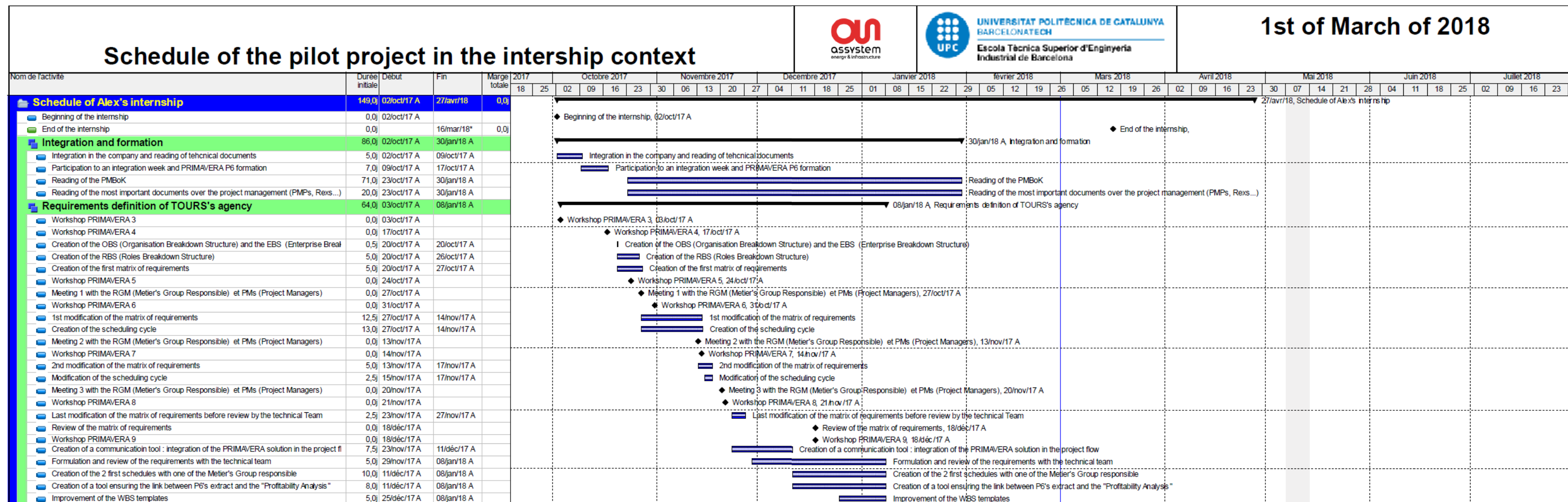


Figure 8 : Schedule of the pilot project included in the internship context 1/2

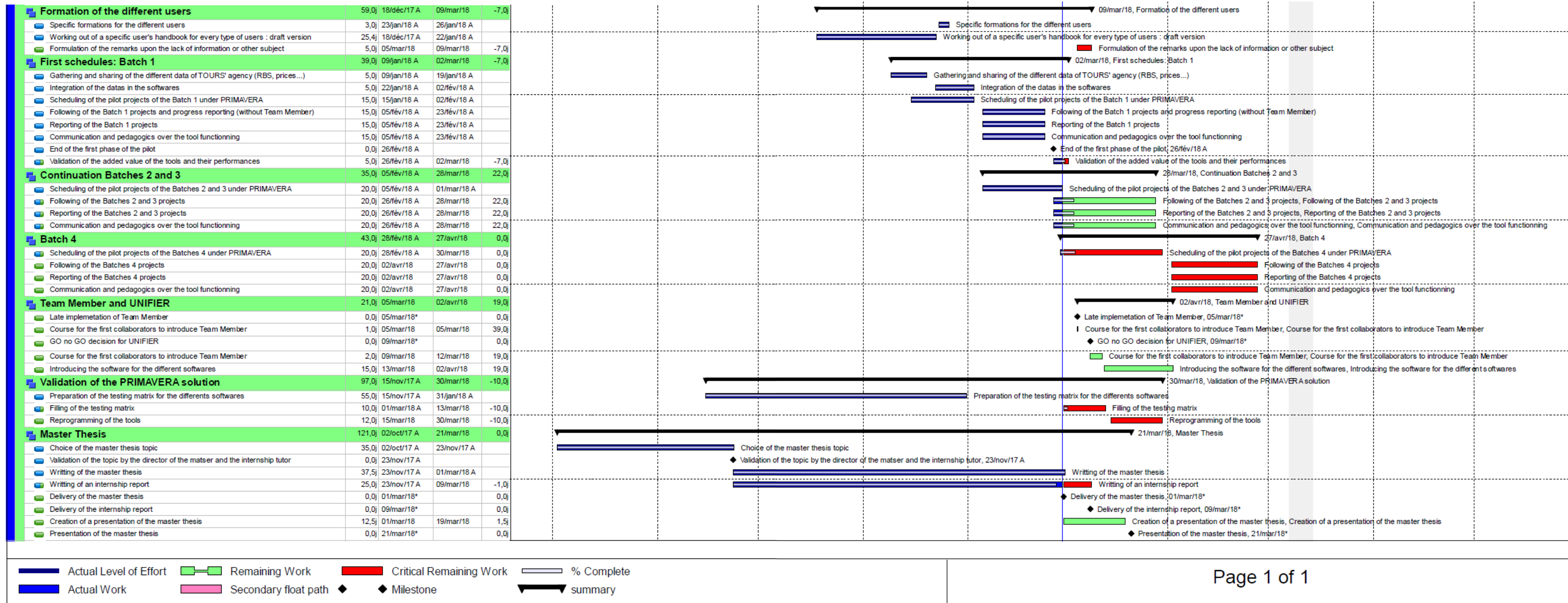


Figure 9 : Schedule of the pilot project included in the internship context 2/2

7.2. Annex 2: list of requirements

In this part, I present the last version of the list of requirements that we updated all along the first phase of the pilot. In this document are represented every function that could benefit to the enterprise. I summarized all the data necessary for the implementation team and the pilot project. Finally, some columns were added to take into account the remaining work to do for every function.

[illegible]

Figure 10 : List of requirements for the PRIMAVERA solution from Tours' agency ½

[illegible]

Figure 11 : List of requirements for the PRIMAVERA solution from Tours' agency 2/2

7.3. Annex 3: receiving matrix

In this part, I presented the receiving matrix for the PRIMAVERA solution. It sums up all the required functions, presented in the previous annex, and all the tests that I think useful to perform for each type of workers.

| Matrice de reception de la suite PRIMAVERA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--|----------------------|--------------------------------------------|---------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--|--------------|--|----------------------|--|----------------------|--|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--|-------------------------|--|------------------------|--|--|--|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | Légende fonctions de l'outil: | | | | | Activité déjà associée au Bt (obligatoire) | Fonction à haute valeur ajoutée | Fonction optionnelle ou moins urgente à implémenter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Partie Chefs de groupe | | | | | | | | | | Partie Chefs de projets | | | | | | | | | | Partie collaborateurs | | | | | | | | | | Partie MOE | | | | | | | | | | | | | | | | | | | | |
| Fonctions attendues de l'outil | | Test CdG 1 | | Test CdG 2 | | Test CdG 3 | | Commentaires (Valeur ajoutée, praticité...) | | Test CdP 1 | | Test CdP 2 | | Test CdP 3 | | Commentaires | | Test collaborateur 1 | | Test collaborateur 2 | | Test collaborateur 3 | | Commentaires | | Statut de la résolution | | Propositions de la MOE | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Validation du test 1 | | Validation du test 2 | | Validation du test 3 | | | | Validation du test 1 | | Validation du test 2 | | Validation du test 3 | | | | Validation du test 1 | | Validation du test 2 | | Validation du test 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Représentation du planning directeur dans un nœud spécifique à l'offre | | A21 | | | | | | | | Création de 5 plannings dans un nœud spécifique à l'offre (simples et complexes) sans avoir rencontré de problèmes liés à l'outil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Représentation du planning opérationnel dans un nœud spécifique à l'offre | | A21 | Création de 5 plannings dans un nœud spécifique à l'offre (simples et complexes) sans avoir rencontré de problèmes liés à l'outil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Affectation de ressources génériques sur les tâches du planning opérationnel | | A22 | Affectation sur 5 plannings différents de ressources génériques parmi celles proposées par l'outil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rendre les informations fournies par le planning opérationnel (notamment le nombre d'heures par ressources génériques) pour rentrer les informations dans l'analyse de rentabilité. Intervention possible pour consolider les informations | | A31 | Obtention d'un export détaillé des différentes ressources génériques attribuées sur un planning. Essais sur 5 plannings différents | | | | | | | | | | Réussite d'implémentation de l'export au sein de la feuille d'analyse de rentabilité sans erreur pour 5 plannings différents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Représenter l'écoulement de la charge de travail sur le projet et sur un métier précis ou une sélection de métiers | | A41 | Représentation graphique de la charge de travail d'une ressource ou d'un type de ressource sur un 5 projets différents | | | | | | | | | | Représentation graphique de la charge de travail d'une ressource ou d'un type de ressource sur une sélection de métiers (5 fois) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Possibilité d'ajout d'un planning dans le calcul du plan de charge (avant que l'affaire soit numérotée), par métier et par sélection de projets PRIMAVERA. Cette fonction permettra d'inclure dans le planning les offres ayant une forte probabilité d'être gagnées | | A42 | Simulation de la possibilité d'intégration au plan de charge des projets encore au stade d'offre. Réaliser cette simulation 5 fois sans problème notable | | | | | | | | | | Simulation de la possibilité d'intégration au plan de charge des projets encore au stade d'offre. Réaliser cette simulation 5 fois sans problème notable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vérification de cohérence entre planning directeur et planning opérationnel - détection des clashs. | | A43 | Utilisation de l'outil excel de gestion des clashs sur 5 projets différents et retour d'expérience sur son efficacité et sa maniabilité | | | | | | | | | | Utilisation de l'outil excel de gestion des clashs sur 5 projets différents et retour d'expérience sur son efficacité et sa maniabilité | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prise en compte des baselines de planification d'un projet en phase d'offre comme base à un projet en phase de réalisation | | A43 | Enregistrement de baselines sur 5 projets différents et comparaisons de ces baselines avec le planning actuel du projet | | | | | | | | | | Exportation de baselines d'un projet en phase d'offre (dans un nœud particulier) sur un autre projet situé dans un autre nœud | | | | | | | | | | Exportation de baselines d'un projet en phase d'offre (dans un nœud particulier) sur un autre projet situé dans un autre nœud | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Affectation de ressources nominatives en lieu et place des ressources génériques déjà présentes | | B11 | Remplacement sur 5 projets différents des ressources génériques renseignées par des ressources nominatives | | | | | | | | | | Attribution de ressources nominatives sans avoir préalablement affecté de ressources non nominatives sur 5 projets différents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Visualiser la charge en fonction de la capacité des ressources au niveau de la ressource, du type de ressource, d'un métier, de l'agence. Cette visualisation permettra une facilitation du lissage sur un horizon de 3-4 semaines ou plus | | B12 | Obtention sur 5 projets différents de graphiques de charge de ressources par ressources, type de ressources et métier | | | | | | | | | | Visualiser la charge de travail des différentes ressources en s'appuyant sur les informations données par PRIMAVERA sur 5 projets différents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proposer un suivi des données d'entrée (si type plan, comment les voir dans Team Member). Possibilité de déclarer les jalons suivant leur date réelle demandée | | B21 | Tester la possibilité de modifier la date de réception des données d'entrée et le décalage entrainé dans le planning sur 10 activités | | | | | | | | | | Tester la cohérence des données stockées dans UNIFER sur plusieurs activités | | | | | | | | | | Tester la possibilité de modifier la date de réception des données d'entrée et le décalage entrainé dans le planning sur 10 activités | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Renseigner l'avancement, possibilité de mise à jour des dates de début et de fin sur les différentes activités ou livrables de l'affaire | | B31 | | | | | | | | | | | | | | | | | | | | | Test sur 10 tâches attribuées sur plusieurs projets du renseignement de l'avancement soit en proposant un pourcentage soit en validant une étape | | | | | | | | | | Test de mise à jour de dates de début et de fin sur 10 activités sur lesquelles le collaborateur est affecté | | | | | | | | | | | | | | | | | | | |
| Harmonisation de l'avancement physique en proposant un menu déroulant au collaborateur résumant les comparaisons entre tâches accomplies et avancement physique. Ce menu déroulant devra rester plus une proposition au collaborateur qu'une obligation. Il pourra toujours remplir un pourcentage tel qu'il le voudra. | | B32 | Etablir sur plusieurs projets, si le pourcentage d'avancement physique est plus cohérent en utilisant un système d'étapes ou si un pourcentage subjectif est suffisant | | | | | | | | | | Vérifier que l'avancement physique donné par les différents indicateurs a un sens dans la globalité du projet. Faire cette vérification sur 5 projets différents | | | | | | | | | | Etablir si la présence d'étapes bien différenciées au sein d'une tâche est utile ou si l'attribution d'un pourcentage personnalisé est plus facile | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alerte sur possibilité de non accomplissement de la tâche dans les temps impartis. Proposition d'une nouvelle date de fin d'activité renseignée par la ressource. Cette date devra être soumise à une autorisation du RDM (ou autres suivant l'importance de l'activité) sur ordre | | B33 | Tester l'arrivée des demandes de déplacement de dates de fin d'activité sur 10 activités différentes | | | | | | | | | | Etablir si le workflow de confirmation de changement de date de fin d'activité est tenable au jour le jour ou s'il est trop chronophage | | | | | | | | | | Tester la fluidité du retour des CdGs et l'efficacité du mode d'opération sur 5 projets différents | | | | | | | | | | Définir si cette option est la meilleure et si une simple discussion hebdomadaire ne suffit pas | | | | | | | | | | | | | | | | | | | |
| Gérer les différentes publications hebdomadaires finales afin de savoir quel est le planning officiel (source des KPIs et des affichages officiels) | | B41 | Retour après 5 cycles de planification sur l'utilité des réunions pour définition d'un planning officiel pour une période donnée | | | | | | | | | | Retour après 5 cycles de planification de l'utilité des réunions pour définition d'un planning officiel pour une période donnée | | | | | | | | | | Test sur 4 semaines et plusieurs affaires de la précision et de la consolidation des informations contenues dans le planning officiel | | | | | | | | | | Définir après 4 semaines si le planning officiel apporte une vraie valeur ajoutée aux éléments apportés par Team member au jour le jour | | | | | | | | | | | | | | | | | | | |
| Afficher à tous les collaborateurs leur planning de travail (liste de tâches avec nom du projet, libellé de la tâche, nombre d'heures affecté pour la réaliser, date de début et date de fin de la tâche) sur une période de 1 jour/semaine. Les tâches en retard de mise à jour doivent être "flaguées" (surgraphes en rouge par exemple) pour éviter l'accumulation de retard | | B51 | | | | | | | | | | | | | | | | | | | | | Retour sur la clarté des informations affichées et utilisé après 4 semaines de travail sur l'outil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Avoir un modèle imprimable pour le planning directeur et le planning opérationnel. Ce planning sera présenté sous forme de diagramme de GANTT. Différentes mailles pour le planning opérationnel : métier, projet, projet-métier, agence | | B52 | Après 4 utilisations du modèle de planning définir si le modèle correspond aux exigences client et de clarté | | | | | | | | | | Après 4 utilisations du modèle de planning définir si le modèle correspond aux exigences client et de clarté | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Modifier le planning prévisionnel: modifier l'affectation des ressources ; modifier, ajouter ou supprimer des tâches ; modifier les liens entre les activités | | B61 | Tester sur 5 projets différents et au moins 10 tâches de modifier, supprimer ou ajouter des tâches, modifier les liens, modifier les ressources | | | | | | | | | | Tester si ces différents changements ont eu les incidences escomptées et repérer les modifications attendues sur 5 projets différents | | | | | | | | | | Tester sur 5 projets différents et au moins 10 tâches de modifier, supprimer ou ajouter des tâches, modifier les liens | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prendre en compte les absences (sujets et formations) des ressources à périodicité hebdomadaire | | B62 | Tester l'actualisation des calendriers personnels des ressources et l'incidence sur les plannings sur 4 semaines et 5 projets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Restitution par projet, projet-activité (BIEZ, métiers, de l'avancement physique, de la valeur acquise et des indicateurs de l'EVM. Les valeurs périodiques doivent être sauvegardées afin de pouvoir faire une revue des indicateurs consolidés dans le temps | | B71 | Tester sur 5 projets différents si l'avancement retenu correspond ce qui est attendu par les CdGs | | | | | | | | | | Tester sur 5 projets différents si l'avancement retenu correspond ce qui est attendu par les CdGs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comparaison entre planning de référence et plannings actualisés. Possibilité de rajouter une référence au cours du projet | | B72 | Tester sur 5 plannings différents la possibilité de prendre une référence dans le planning | | | | | | | | | | Tester sur 5 plannings différents la possibilité de comparer la référence avec le planning actuel du projet | | | | | | | | | | Tester sur 5 plannings différents la possibilité de prendre une référence dans le planning | | | | | | | | | | Tester sur 5 plannings différents la possibilité de comparer la référence avec le planning actuel du projet | | | | | | | | | | | | | | | | | | | |
| Retranscription des indicateurs fournis actuellement par la LOD (liste des indicateurs) | | B73 | Tester sur 4 affaires la complétude des informations fournies par les indicateurs | | | | | | | | | | Envoyer une analyse quand à la praticité de Bt Publisher | | | | | | | | | | Tester sur 4 affaires la complétude des informations fournies par les indicateurs | | | | | | | | | | Envoyer une analyse quand à la praticité de Bt Publisher | | | | | | | | | | | | | | | | | | | |
| Analyse des marges (financières) restantes par rapport à la date de livraison | | B74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyse des marges (en terme temporel) (marge totale) sur les jalons d'interface (BIEZ et BIEZ). Visibilité de ces marges sur un projet, un métier, ou un lot de projet | | B75 | Tester sur 5 projets différents l'exactitude des marges sur les jalons de livraison sur un projet particulier | | | | | | | | | | Tester sur 5 projets différents l'exactitude des marges sur les jalons de livraison sur un lot de projets | | | | | | | | | | Tester sur 5 projets différents l'exactitude des marges sur les jalons de livraison sur un projet particulier | | | | | | | | | | Tester sur 5 projets différents l'exactitude des marges sur les jalons de livraison sur un métier | | | | | | | | | | | | | | | | | | | |
| Retranscription des principaux indicateurs utilisés à l'heure actuelle par les chefs de projets et responsables de groupes métier. Consulter l'historique des valeurs passées en terme d'avancement et d'indicateurs de l'EVM pour analyser les tendances des différents projets | | B76 | Définir les indicateurs utilisés en dehors de la suite PRIMAVERA. Les communiquer à l'administrateur local pour qu'il les communique pour intégration dans la solution | | | | | | | | | | Définir les indicateurs utilisés en dehors de la suite PRIMAVERA. Les communiquer à l'administrateur local pour qu'il les communique pour intégration dans la solution | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyse des clashs plannings opérationnel et directeur par projet, métier ou groupe de projets | | B77 | Tester sur 4 affaires différentes la cohérence de l'outil de détection de clash sur un projet particulier | | | | | | | | | | Tester sur 4 affaires différentes la cohérence de l'outil de détection de clash sur une sélection de projets | | | | | | | | | | Tester sur 4 affaires différentes la cohérence de l'outil de détection de clash sur un projet particulier | | | | | | | | | | Tester sur 4 affaires différentes la cohérence de l'outil de détection de clash sur une sélection de projets | | | | | | | | | | | | | | | | | | | |
| Prevoir un export de l'avancement physique, des dates de fin prévisionnelle, afin de pouvoir compléter la LOD sans fausse de doublons de tâche | | B78 | Tester sur 4 projets différents l'utilité des informations remontées par la suite PRIMAVERA pour injection dans la LOD | | | | | | | | | | Tester sur 4 projets différents l'utilité des informations remontées par la suite PRIMAVERA pour injection dans la LOD | | | | | | | | | | Tester sur 4 projets différents l'utilité des informations remontées par la suite PRIMAVERA pour injection dans la LOD | | | | | | | | | | Tester sur 4 projets différents l'utilité des informations remontées par la suite PRIMAVERA pour injection dans la LOD | | | | | | | | | | | | | | | | | | | |
| Rapporter les actual costs mensuels et cumulés par code activité de l'affaire | | B81 | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les actuals costs sont bien remontés de BIEZ sans erreurs sur les différents postes de commande | | | | | | | | | | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les actuals costs sont bien remontés de BIEZ sans erreurs sur les différents postes de commande | | | | | | | | | | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les actuals costs sont bien remontés de BIEZ sans erreurs sur les différents postes de commande | | | | | | | | | | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les actuals costs sont bien remontés de BIEZ sans erreurs sur les différents postes de commande | | | | | | | | | | | | | | | | | | | |
| Collecte et mise en forme des frais annexes du projet pour l'actualisation du client | | B91 | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les frais annexes du projet sont bien remontés dans la solution | | | | | | | | | | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les frais annexes du projet sont bien remontés dans la solution | | | | | | | | | | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les frais annexes du projet sont bien remontés dans la solution | | | | | | | | | | Si la fonction a été implémentée vérifier sur 4 affaires différentes que les frais annexes du projet sont bien remontés dans la solution | | | | | | | | | | | | | | | | | | | |
| Assurer les fonctionnalités actuellement intégrées dans le FFR pour le moment cette fonction sera à vérifier ultérieurement | | B101 | Ne remplaçant pas le FFR pour le moment cette fonction sera à vérifier ultérieurement | | | | | | | | | | Ne remplaçant pas le FFR pour le moment cette fonction sera à vérifier ultérieurement | | | | | | | | | | Ne remplaçant pas le FFR pour le moment cette fonction sera à vérifier ultérieurement | | | | | | | | | | Ne remplaçant pas le FFR pour le moment cette fonction sera à vérifier ultérieurement | | | | | | | | | | | | | | | | | | | |
| Création automatique de BIs suivant les documents devant être envoyés. Ces BIs reprendront la présentation actuellement utilisée | | B110 | Vérifier sur 4 projets différents que le FFR est vérifié | | | | | | | | | | Après l'accumulation de plusieurs livrables dans UNIFER, vérifier qu'il est possible via l'outil de recherche de retrouver le livrable souhaité | | | | | | | | | | Après l'accumulation de plusieurs livrables dans UNIFER, vérifier qu'il est possible via l'outil de recherche de retrouver le livrable souhaité | | | | | | | | | | Après l'accumulation de plusieurs livrables dans UNIFER, vérifier qu'il est possible via l'outil de recherche de retrouver le livrable souhaité | | | | | | | | | | | | | | | | | | | |
| Gestion des indicateurs ODD externes | | B115 | Après le suivi de plusieurs projets, établir si les indicateurs fournis par la solution PRIMAVERA répondent aux exigences préalablement exprimées | | | | | | | | | | Après plusieurs semaines a-t-on remplacé les outils précédemment utilisés pour obtenir l'ODD interne | | | | | | | | | | Après le suivi de plusieurs projets, établir si les indicateurs fournis par la solution PRIMAVERA répondent aux exigences préalablement exprimées | | | | | | | | | | Après plusieurs semaines a-t-on remplacé les outils précédemment utilisés pour obtenir l'ODD interne | | | | | | | | | | | | | | | | | | | |
| Autoriser l'accès à certaines fonctions depuis l'extérieur de l'agence. Vérifier entre autre la compatibilité avec tous les utilisateurs internes ainsi que la compatibilité des outils avec les différents réseaux internes et externes | | B121 | Tester l'accessibilité depuis la plateforme du CNEPE aux outils en ligne de la suite PRIMAVERA sur 5 projets différents | | | | | | | | | | Tester l'accessibilité depuis la plateforme du CNEPE aux outils en ligne de la suite PRIMAVERA sur 5 projets différents | | | | | | | | | | Tester l'accessibilité depuis la plateforme du CNEPE aux outils en ligne de la suite PRIMAVERA sur 5 projets différents | | | | | | | | | | Tester l'accessibilité depuis la plateforme du CNEPE aux outils en ligne de la suite PRIMAVERA sur 5 projets différents | | | | | | | | | | | | | | | | | | | |
| Performance de l'outil en terme de rapidité, fluidité d'accès, rafraichissement des données sur team member et UNIFER | | B122 | Après 5 semaines d'utilisation de la suite PRIMAVERA faire un retour sur les performances intrinsèques de l'outil | | | | | | | | | | Déterminer si la fluidité de l'outil a été réduite ou non après plusieurs semaines d'utilisation | | | | | | | | | | Après 5 semaines d'utilisation de la suite PRIMAVERA faire un retour sur les performances intrinsèques de l'outil | | | | | | | | | | Déterminer si la fluidité de l'outil a été réduite ou non après plusieurs semaines d'utilisation | | | | | | | | | | | | | | | | | | | |
| Stockage des logs de RAG | | C10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Figure 12 : Receiving matrix for the PRIMAVERA solution

7.4. *Annex 4: good practices document for the schedule creation*

In this part, I reported the recapitulative document created for wild spreading the good practice over the creation of schedules of both level 2 and 3. Even if it is a short document, it was a powerful tool of communication.

Global explanations upon the schedules created on PRIMAVERA P6

- For every projects 2 schedules will be created:
 - A level 2 (in project management sense) schedule handled by a Project Manager or the planner, with a precise WBS:
 - WBS 1 (mandatory) : Invoicing milestones decided in agreement with the customer.
 - WBS 2 (mandatory) : Performing tasks that correspond with the CBS of the project.
 - WBS 3 (mandatory) : Mandatory end milestones for the different deliverables, decided at the beginning of the project with the client
 - WBS 4 (optional) : A large scale schedule with only macro-tasks that the Project Manager can create
 - A level 3 schedule handled by the team leaders or the planner. In this schedule, the WBS can be chose (however with a model that has to be integrated) with some tasks and milestones which are mandatory (see next slide)
- In order to obtain a good interface with UNIFIER the level 2 schedules will have to be tagged through different project codes :
 - « PMA » code equals to « BE Tours » ; « Criticité » code depending of the classification of the projects (N1, N2...) ; « Interface UNIFIER » code equals to « Yes »

Figure 13 : Good practices document page 1/3

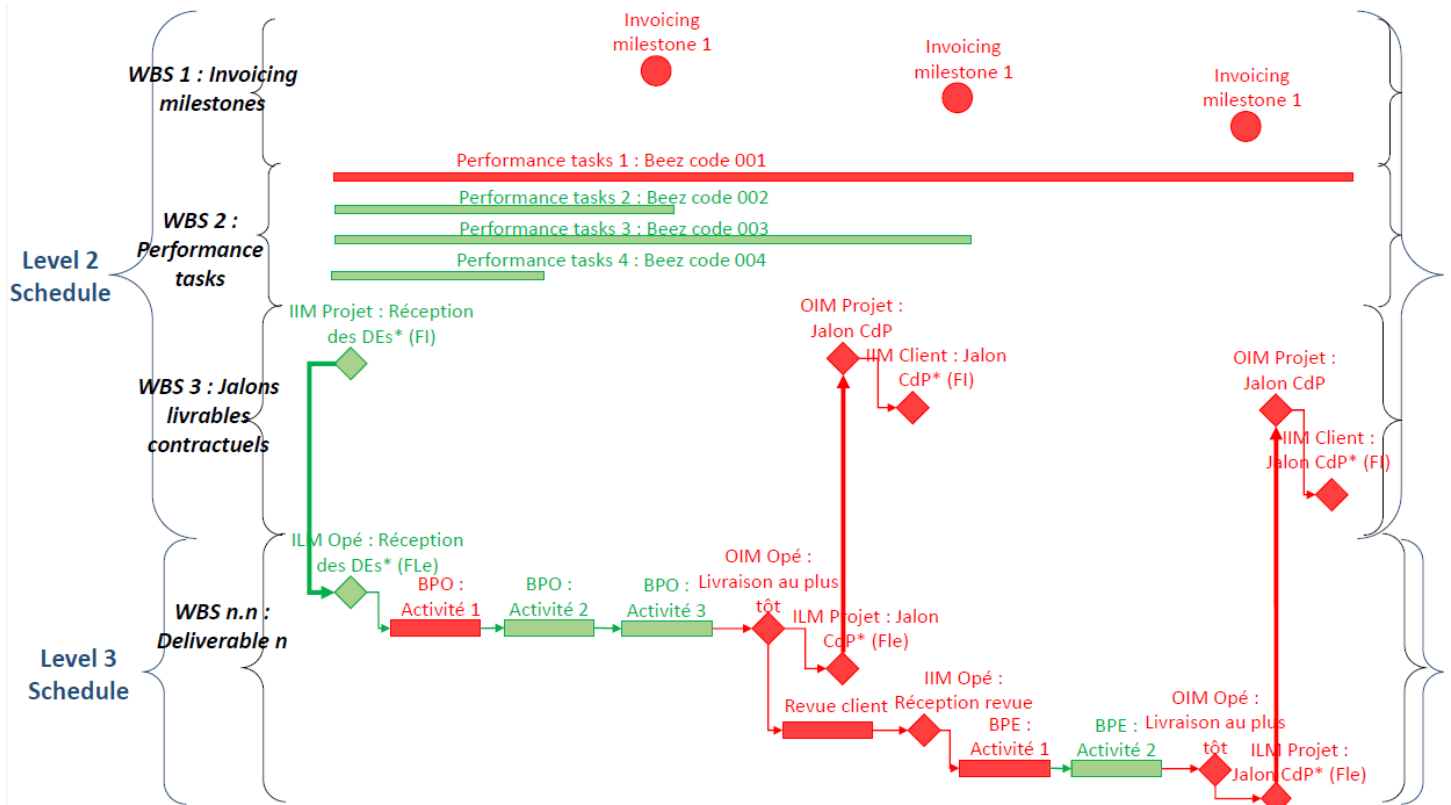


Figure 14 : Good practices document page 2/3

Legend and good practices

On the previous document the milestones and the tasks represented in red are mandatory in the different schedules. The ones in green are represented at the discretion of the person in charge of every schedules under the authority of the project manager or the team leader. If the non-compulsory activities are added, they are submitted to the same rules of codes explained in the following table. In particular the contractual deliverable have to be tagged with the activity code "UNIFIER Activity" equals to "Contractual deliverable Milestone".

| Pattern | Explanation |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Invoicing milestone | Milestones decided with the client. Activities of type « End Milestones » mandatory tagged with the activity code "UNIFIER Activity" equals to "Invoicing Milestone". |
| Performance tasks n : Beez code 00X | Activity describing the CBS (Cost Breakdown Structure) . Activities of type« level of effort » mandatory tagged with the activity code "UNIFIER Activity" equals to "Performance tasks". |
| | Link between activities of different level of scheduling (here between level 2 and 3) |
| | Link between activities of same level of scheduling |
| Name of the task | Activities of type « Task dependant » taht can be found in the level 3 schedules or in the WBS 4 of the level 2 schedule. On several of these tasks, one will load some resources. In order to be able to consolidate the charge upon the different tasks, they will be tagged with the activity code « BI activity » equals to « Planned workload » |
| Name of the milestone | Non-constrained milestones as the milestones named OIM (Output Interface Milestone) |
| Name of the milestone* | Constrained milestones. Two types of constraints are to be find here : Mandatory finish (FI) where the milestone will not move even if a delay exists (as the milestones named IIM (Input Interface Milestone)) and Finish on (Fle) where the milestone could mive in case of delay (as the milestones named ILM (Inter Level Milestone)) |

Figure 15 : Good practices document page 3/3

7.5. Annex 5: following the scheduling of the projects

7.5.1. Annex 5.1: projects' schedules dashboard

After the elaboration of the Batch 2, it became paramount to register the progression of the project scheduling and the following of the progresses. To communicate to every team leader and project manager, we thus created a recapitulative dashboard updated every week. You can find below the last version of this dashboard with its caption.

| Numéro de l'affaire | Lot de l'affaire | Nom de l'affaire | Date de début prévisionnelle | Date de fin prévisionnelle | CdP en charge | Etat du planning directeur | Date de dernière mise à jour du planning directeur | Disponible sur le Cloud | RGM ou RLM en charge | Etat du planning opérationnel | Date de dernière mise à jour du planning opérationnel | Disponible sur le Cloud2 |
|---------------------|------------------|--------------------------------|------------------------------|----------------------------|----------------|------------------------------|----------------------------------------------------|-------------------------|----------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------|
| 73646 | 1 | Etude thermique CCL | 13/11/2017 | 31/05/2018 | SEGUINOT,ERIC | Réalisé et revu | 14/02/2018 | oui | Pierre ROBICHON | Réalisé et revu | 02/02/2018 (revue annulée le 20/02/2018 car changement de cadre). Revue lorsque l'avancement sera plus grand. | oui |
| 74445 | 1 | MISTUB SIZEWELL | 20/12/2017 | 28/02/2018 | GIRAUD,UONEL | Réalisé, attente de revue | 19/02/2018 | oui | Marc SALAÜN | Réalisé et revu | 19/02/2018 | oui |
| 75479 | 1 | Firestudies 2018 | 01/02/2018 | 31/12/2018 | GIRAUD,UONEL | Réalisé, attente de revue | 19/02/2018 | oui | Marc SALAÜN | Réalisé et revu | 19/02/2018 | oui |
| OFFRE | 1 | Vérif support VD3 | 29/01/2018 | 31/05/2018 | SEGUINOT,ERIC | A réaliser si affaire gagnée | - | oui | Pierre ROBICHON | Réalisé et revu | 29/01/2018 | oui |
| 74763 | 1 | MAJ DSE ECC | 01/02/2018 | 31/07/2018 | SEGUINOT,ERIC | Réalisé, attente de revue | 22/02/2018 | oui | Mathieu MAHE | Réalisé et revu | 22/02/2018 | oui |
| 72439 | 1 | Appui systèmes SEO, SEH, SEK | 01/02/2018 | 01/02/2019 | GIRAUD,UONEL | Réalisé, attente de revue | 23/02/2018 | oui | Mathieu MAHE | Réalisé et revu | 23/02/2018 | oui |
| OFFRE | 1 | MAJ risques inondation | 01/03/2018 | | SEGUINOT,ERIC | A réaliser si affaire gagnée | - | oui | Marc SALAÜN | Réalisé et revu | 19/02/2018 | oui |
| 00072869 | 2 | ETUDE AGRESSIONS UK LOT 1 & 2 | 01/08/2017 | 31/12/2018 | GIRAUD,UONEL | Réalisé, attente de revue | 19/02/2018 | oui | Marc SALAÜN | Réalisé et revu | 19/02/2018 | oui |
| 73330 | 2 | DETU/CIS/UK/DFD GE | 01/09/2017 | 31/12/2018 | GIRAUD,UONEL | A décider | - | non | Ludovic GRANGER | Importé, à revoir | - | non |
| 70184 | 2 | DSE PPR PEE SEG tous sites | 01/02/2017 | 31/07/2019 | SEGUINOT,ERIC | A réaliser | - | non | Mathieu MAHE | Réalisé et revu | 23/02/2018 | non |
| 00067898 | 3 | PILOTAGE IES NOG | 21/09/2016 | 31/12/2018 | HOARAU,FLORENT | A réaliser | - | non | Thibault SEMON | En cours de réalisation | - | non |
| 00071208 | 3 | CALCUL FORFAIT GRAND CHAUD N°7 | 01/03/2017 | 31/12/2018 | SEGUINOT,ERIC | A réaliser | - | non | Pierre ROBICHON | Réalisé, attente de revue | 07/02/2018 | non |
| 72035 continuation | 3 | Etude pôle PRS | 01/04/2018 | 31/12/2018 | HOARAU,FLORENT | A réaliser | - | non | Thibault SEMON | En cours de réalisation | - | non |
| 00068710 | 4 | UK - PLATEAU DFD | 02/01/2017 | 31/03/2022 | GIRAUD,UONEL | A réaliser | - | non | Ludovic GRANGER | A réaliser | - | non |
| 67981 | 4 | NAA DDS | 01/09/2017 | | SEGUINOT,ERIC | A réaliser | - | non | Marc SALAÜN | Réalisé, attente de revue | - | non |
| 00067081 | 4 | BPU Réalisation SCCD | 01/09/2016 | 31/12/2019 | SEGUINOT,ERIC | A réaliser | - | non | Ludovic GRANGER | A réaliser | - | non |
| 00073011 | 4 | SMNGC AVT SCHEMAS ELEC MECA | 01/09/2017 | 31/03/2018 | SEGUINOT,ERIC | A réaliser | - | non | Ludovic GRANGER | A réaliser | - | non |
| 00062829 | 4 | PEE Source Froide | 15/11/2015 | 30/06/2025 | SEGUINOT,ERIC | A réaliser | - | non | Mathieu MAHE | A réaliser | - | non |

| | | | | | |
|-----------|------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------|
| Légende : | Activité à retard conséquent : à faire en priorité par Alexandre | Activité à retard modéré : à faire au plus tôt par Alexandre | Activité à retard conséquent : à faire en priorité par CdP ou RGM concerné | Activité à retard modéré : à faire au plus tôt par CdP ou RGM concerné | Activité dans les temps |
|-----------|------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------|

Figure 16 : Projects schedule and last updating recapitulative dashboard

7.5.2. Annex 5.2: scheduling cycle for the different types of workers

In order to have a certain rigor in the processes of scheduling, it quickly appeared the need of creating a regular monitoring and scheduling cycle. This cycle was dependent on the average duration of the projects and we decided to create a weekly cycle that one can see below.

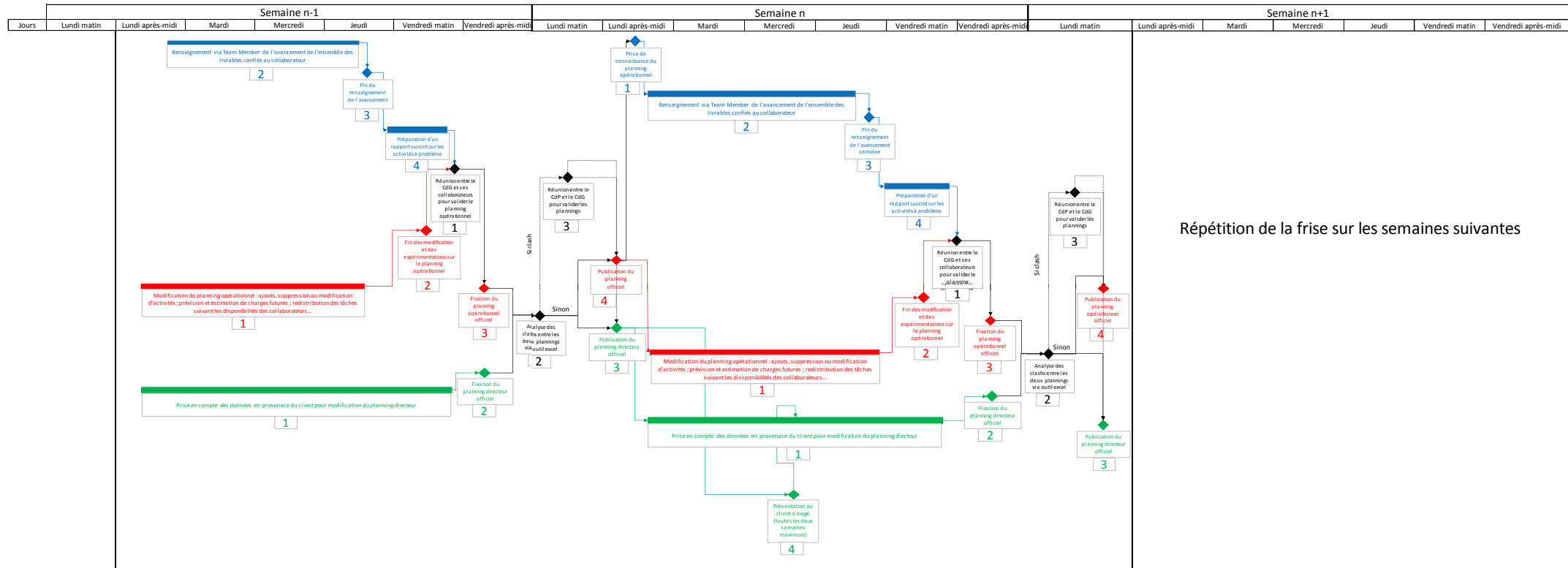


Figure 17 : scheduling cycle for the different types of workers