**Student Task 5 Dynamic ZABBIX Maps for JumpingJIVE**

**Progress and timeline**

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1. Install Ubuntu Linux

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| Description | Progress | Timeline | Comments |
| Install Ubuntu Linux on the test computer | 100% | 09/2018-10/2018 | The laptop was picked up in September, 2018, when the installation was started afterwards. Ubuntu 18.04 has already been successfully installed on the test laptop. |

1. Getting familiar with Linux commands and operations

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| Description | Progress | Timeline | Comments |
| Getting familiar with Linux commands and operations, referring to tutorials and exercises. | 100% | 08/2018-12/2018 | Linux system is the only working platform for this task. Thus operations and commands on Linux are basics for further development. |

1. Install Zabbix on Linux

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| Description | Progress | Timeline | Comments |
| Install Zabbix on Linux, , mainly based on Zabbix official tutorials and handbooks, as well as JumpingJIVE project documentations including *JumpingJIVE Deliverable 8.5 Integration existing software into central infrastructure (for system monitoring)* and *VLBI SysMon Node* | 100% | 09/2018-10/2018 | Both Zabbix official tutorials and JumpingJIVE project documentations provide detailed procedures for software installation. These two were both refered during the installation process. |

1. Setup configuration of Zabbix

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| Description | Progress | Timeline | Comments |
| Setup configuration of Zabbix according to project requirements. | 100% | 09/2018-10/2018 | Consecutive process with the next subtask of software configuration.  Configurations have been set according to the documentations including *JumpingJIVE Deliverable 8.5 Integration existing software into central infrastructure (for system monitoring)* and *VLBI SysMon Nod.* However, as the environment of laptop is not exactly same with server machine, not all steps are deployed with the laptop. |

1. Understand logic and structure of Zabbix

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| Description | Progress | Timeline | Comments |
| Understand logic and structure of Zabbix. Refer to the tutorials and other documentations to have an overview of Zabbix software. Understand what needs to deal with Zabbix. Understand the performance of Zabbix functions. | 100% | 10/2018-11/2018 | Basic web-based logic has been investigated. |

1. Understand operations of Zabbix

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| Description | Progress | Timeline | Comments |
| Understand operations of Zabbix. Especially operations related to the target scripts such as map creation, map parameters definition, graph operations as well as checking software information. | 100% | 10/2018-11/2018 | Having learnt and practiced basic operations with GUI. Should further understand more details of operations. |

1. Understand the objective of tasks

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| Description | Progress | Timeline | Comments |
| Understand the objective of the task by face-to-face meeting. | 100% | 11/2018 | Had a face-to-face meeting with Dr. Neidhart. Some confusions and questions have been answered. |

1. Selection of programming language

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| Description | Progress | Timeline | Comments |
| Selection of programming language according to current conditions. In addition, get familiar with the language programming if haven’t learnt it before. | 100% | 09/2018-12/2018 | Python was chosen because its good performance in terms of efficiency, compatibility and expansibility.  Thanks to a basic pre-knowledge about Python language, this step could be finished faster than expected. |

1. Understand Zabbix API

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| --- | --- | --- | --- |
| Description | Progress | Timeline | Comments |
| Understand Zabbix API by referring to Zabbix official tutorials. | 100% | 10/2018-11/2018 | Knowledge about Zabbix API could be easily found from official tutorials. This Information is critically fundamental for further developement. |

1. Understand JSON-RPC 2.0

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| Description | Progress | Timeline | Comments |
| Understand JSON-RPC 2.0 | 100% | 11/2018-12/2018 | Having not learnt about JSON-RPC 2.0 before. However, this is also essential because it defines the standard data structures and the rules. |

1. Understand usage of JSON-RPC 2.0 in Python

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| --- | --- | --- | --- |
| Description | Progress | Timeline | Comments |
| Understand usage of JSON-RPC 2.0 in Python | 100% | 11/2018-12/2018 | Having understood JSON-RPC in last subtask and learnt how to realize it in python3. |

1. Write scripts as requests to get host information from Zabbix

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| --- | --- | --- | --- |
| Description | Progress | Timeline | Comments |
| Write scripts as requests to get information from Zabbix | 100% | 12/2018-01/2019 | Requests through Zabbix API can only be done with login and token information, which should be firstly stated in the scrips. Finished. |

1. Write scripts to create a new image

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| Description | Progress | Timeline | Comments |
| Write scripts to create a new image | 100% | 12/2018-01/2019 | Stations or antennas should be represented by an icon on the map. Background of the map is realized by an image. In Zabbix API, it is introduced in the form of BASE64. Already finished. Attention further high resolution image is needed. |

1. Write scripts to create a new map

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| Description | Progress | Timeline | Comments |
| Write scripts to create a new map | 100% | 12/2018-01/2019 | Maps creation can be not only easily performed through GUI but also through python requests with self-defined parameters. Many properties should be defined through python scripts. Finished. |

1. Write scripts to add or delete a telescope position

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| --- | --- | --- | --- |
| Description | Progress | Timeline | Comments |
| Write scripts to add or delete a telescope position | 100% | 12/2018-01/2019 | These are basic operations in Zabbix. Finished. Attention that coordinates are just approximated, which needs to be confirmed by project responsible person. In addition, detailed information about telescopes, stations are still unknown. Further adjustment need to be performed. |

1. Programming optimization

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| Description | Progress | Timeline | Comments |
| Programming optimization. Scripts of single subtasks should be combined and optimized. | 75% | 02/2019-03/2019 | Partly finished. Lack of knowledge about what it is expected to look like. Currently shown as a python script. |

1. Adjustment according to productive system VLBI SysMon

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| --- | --- | --- | --- |
| Description | Progress | Timeline | Comments |
| Adjustment according to productive system VLBI SysMon | 25% | 02/2019-03/2019 | Not yet start. Need data and technical support from project responsible person. |

1. Test and Integration

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| Description | Progress | Timeline | Comments |
| Test and integration on both test laptop and productive system. | 50% | 02/2019-03/2019 | Not yet finished. Testing on laptop is being in process. |