**3RD YEAR PROJECT**

**INITIAL PROPROSAL**

I will be doing my 3rd year project with Kadrieh Mohamzadeh. Both of us are currently on an internship working for the department of social protection. Over the last couple of weeks we have been in training but this week we were assigned to a massive company project. The project involves changing the company’s system architecture and developing a new platform and introducing the use of git and github to better enhance the merging, developing, building and running of projects.

The company’s uses 2 main services BOMi2 and BOMi4 (Business Object Model). Originally there was the BOMi2 client/server app, then came the BOMi4 webapp. A bridge was built the “BOMi2 bridge,” was implemented, it became possible to access BOMi2 functionality from within the BOMi4 webapp. The BOMi4 webapp is used to find customers and research, add, update or perform actions against the data. The BOMi4 environment also supports web self-services (WSS), new versions of these services are released once a month. Each project developed within BOMi4 is made up of clusters, each of which are built and tested together in Visual Studio.

For the most part the code for all these apps resides in a single code repository, all code is re-built for each release, in theory therefore all code has to be re-tested. The development of a new platform will introduce a system where Instead apps along with their code should move into their own repos. Not all code is re-tested after being rebuilt, automated testing of BOMi2 and BOMi4 take far too long (12-24 hours) to run, this means that it is not feasible to force developers to wait and check that a previous checkin/commit does not break the build of the project. Meaning the build is broken a lot of the time and failing tests are ignored. If code was stored in their own repos and was to live together, deploy together and that changes at the same rate this would solve this problem. Also different clusters of the BOMi4 webapp would have their own repos, meaning that if code was not changed in a given cluster, then there is no need to re-test that code. If an app hasn’t been redeployed in a given month, then no manual regression testing is required.

Our aim in the “new platform” project is to support multiple apps, each of which is made up of multiple components, modules, clusters, all of which may be their own code repo. In other words, a much finer-grained view of handling our codebases. Initially the entire structure and codebase will be mirrored into git so as to not affect the current system, then we will start to take bits of code out from the real system. The intention is that each git repository contains the code for a single BOMi artefact (made up of components, modules, clusters), broadly corresponding to a single C# or VB project, with supporting tests. These might be for a piece of infrastructure, or could be a cluster. Work on this project started in 2016 and will continue through 2017/18.

The department is made up of teams, Central testing, developers, production support, business analysts. The system architecture is hierarchical, the top branch is SDM\_MAIN where projects go when they are ready to go live at the end of the 4 week cycle. Then SDM\_DEV, where the release team works, a project is sent to release when it has been developed and tested for release, then INTEG where central testing occurs and there are sub branches BOM\_CES, BOM\_CPT, etc. Our goal ìn the project is to mirror this architecture so that we can create copies of projects within each branch and copy them over to our mirrored version of the system and store each in there own git repos. This will allow us to work freely and without having and impact on the live system.

