**Badis\_Presenting:**

Our Project team “NovoFM” have 4 members (myself Badis as a PManager, Haakon as a Sys Engineer, Charlie, and Arshad) in the team called NovoFM, we worked on Smart Facility management project under the supervision of the Prof. Aurilla Aurélie Arntzen in HSN university college.

So what is **FM: (definition)**

To start with, we researched the state of the art and identified the different services (Light, Fire system, HVAC, CCTV for different possible buildings (like schools, office buildings, hotels, hospitals, factories, department complexes,),

(after the research made on FM, we found that FM is a very complex field because it has many parameters and services to deal with. The project team they saw an opportunity related to the HSN building, after hearing some staff (students and employees) expressing their discomfort about the HVAC conditions inside Krona building. So the team have chosen the HVAC system, as a study case, also because The buildings get bigger and bigger, the need for efficient and good indoor environment is greater than ever. and the **goal** is to design a smart control system for HVAC services in facilities, by making it more efficient and easier to use, by 1st May 2016.

* The project will be a research and development, and depending on our experience and intuition, we classify it with the four diamond dimensions as shown here:
* **Novelty** – It was classified between platform and derivative, that is because the product is an improvement of an existing HVAC platform
* **Technology** – It was classified as high tech because the technology involved is new to the project group, but is available.
* **Complexity** – It was classified as a system because it involves different components working together to meet an operational need.
* **Pace** – It was classified as fast/competitive because there are other businesses addressing the same market opportunities.

**WBS (work breakdown structure):**

* As you can see this the WBS of the project, illustrating the sections to be executed, mainly : Research, Identification of stakeholders requirements, choose system design concepts, make system design, validation and verification.

**Gantt Chart**: here is the gantt chart.

**Risk Management:**

Here is an analysis of potential risks categorized in: overall project related risks, task risks and risks related to the business in addition the conflict risk. And the source of each is identified then quantified by its level of probability of occurrence. And the team thought of a strategy to mitigate it. As mentioned in the competence part that a major risk the team is dealing with during the project progress is because of a lack of competence and lack of knowledge which makes the members spend more human hours on building some competence and cover knowledge gaps about the FM domain in general and the HVAC system in particular.

**Current HVAC control system**

This figure below shows the most commonly used HVAC control system in houses and office buildings. And illustrates the different components that the HVAC control system is connected to in order to achieve the expected behavior of the HVAC indoor environment parameters. Actuators (heating/ cooling equipment, dampers controlling the air flow in/out, etc...) so the typical HVAC control system contain three parts: thermostat, HVAC controller, HVAC actuators.