Requirements Engineering, Scrum and EDAP

**Goal oriented Requirement Engineering**

“A goal is an objective the system under consideration should achieve”

“A goal under responsibility of a single agent in the software-to-be becomes a requirement whereas a goal under responsibility of a single agent in the environment of the software-to-be becomes an assumption”

In Goal oriented Requirement Engineering, the desired properties of a System are described with the help of goals: “A goal is an objective the system under consideration should achieve”. Goals can be detected by asking the questions why, how and how else. To define the requirements for the system, goals are refined and broken down into subgoals. A requirement is then defined as a “goal under responsibility of a single agent in the software-to-be”. An Agent is an “active component[s] of the system, such as human, devices, and software”. Not only the system itself can be described with goals and requirement, the environment of the system also has goals, “a goal under responsibility of a single agent in the environment of the software-to-be becomes an assumption”. Refining goals also includes the resolution of conflicts between goals, requirements or assumptions. “Goals have been recognized to provide the roots for detecting conflicts among requirements and for resolving them eventually”

**Scrum**

In Scrum, software is developed incrementally. The requirements and tasks are listed in a Product Backlog. Each increment, called Sprint, a number of items in the Product Backlog are worked on. Before each sprint, there is the Sprint Planning meeting. The items from the backlog are selected and their implementation planned. Each day during the sprint, daily scrum meetings are held where progress and impediments can be discussed and the work for the day is planned. After the sprint, the increment is reviewed in the Sprint Review and improvements are discussed in the Sprint retrospective.

**EDAP**

In EDAP, the planned system, its actors/stakeholders and its environment are first described, to map out values, relationships and interests. Then, biases are listed, which describe given circumstances that can impact the decisions that will be made about the system. In the next phase, conflicts between values, goals and interests are explored and analysed. Pros and Cons for courses of action are specified. From this information, it is decided whether to stop and find a different solution or to go forward. In that case, the technical feasibility is analysed. The final step is testing if the finished System holds the standards that were defined.

**Combining the three/ common features**

In all three, there is some form of goals. In requirement engineering its goals and requirements, in scrum, there are backlog items and in edap, there are ethical values and other goals. These goals dictate what should be done, sometimes they can contradict each other, which causes a conflict. For example, the goal: the system should provide a very personalised user experience can come into conflict with the value: the users data should be private. In each strategy, these goals are refined and subgoals are specified. In scrum, backlog items can be divided into tasks. In edap, a broad ethical value can be made more specific to the system at hand. Both goal oriented requirement engineering and edap are strategies to define requirements to the system. Scrum is a strategy to take such requirements and guide their implementation. Requirements engineering and edap should therefore be integrated into the scrum process whenever requirements or goals are added to the backlog.