**TEAM ASSIGNMENT 13.**

1. **Introduction**.
2. **Wideband Delphi method.**
3. Purpose.

Help project team estimate (risk, time, resource and budget) and define work base on work breakdown structure.

1. Input and output.

*Input*: vision and scope document, or other documentation that defines the scope of the work product being estimated. In team assignment 13, input is Viking URD document.

*Output:*

1. Work breakdown structure.
2. Estimate for each task defined in WBS (present as detail schedule, include work, time, resource, cost and budget ).
3. Delphi form.
4. Wideband Delphi form.
5. Steps of estimate.

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| In theory | In team assignment 13 |
| **Choosing the team**. The project manager selects the estimation team and a moderator. The team should consist of three to seven project team members. The team should include representatives from every engineering group that will be involved in the development of the work product being estimated |  |
| **Kickoff meeting**. The moderator prepares the team and leads a discussion to brainstorm assumptions, generate a WBS, and decide on the units of estimation | Before this meeting, a member will draft a list of basic work need to be completed in project. The moderator will leads a discussion to brainstorm assumptions, generate a WBS, and decide on the units of estimation, like in theory.  WBS will be built base on the project development stage, top-down, from basic to detail. Begin at requirement, design, code and test phase. Each phase will be discussed to identify how to complete this phase. Split work into several parts and so on until work can be easily estimated resources and effort. |
| **Individual preparation**. After the kickoff meeting, each team member individually generates the initial estimates for each task in the WBS, documenting any changes to the WBS and missing assumptions | Each member will complete his/her Delphi form with estimation for each task (in this case, task is basic unit should be estimated), time, cost, resource. They can use their own processes to estimate. |
| **Estimation session**. The moderator leads the team through a series of iterative steps to gain consensus on the estimates. At the start of the iteration, the moderator charts the estimates on the whiteboard so the estimators can see the range of estimates. The team resolves issues and revises estimates without revealing specific numbers. The cycle repeats until either no estimator wants to change his or her estimate, the estimators agree that the range is acceptable, or two hours have elapsed. |  |
| **Assembling tasks**. The project manager works with the team to collect the estimates from the team members at the end of the meeting and compiles the final task list, estimates, and assumptions. |  |
| **Reviewing results**. The project manager reviews the final task list with the estimation team |  |
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1. **Parameter**.