EXTENDED ACTIVITY

Task:

*A free-roving (no umbilical cable) submarine inspection drone is required for undersea cables: operating down to 250 m depth. endurance of 2 hours continuously powered operation, carrying video and ultrasound imaging equipment drawing a 30 W electrical load, and have suitable propulsion to travel up to 4 m/s peak speed with 1 m/s cruise. Total mass is to be < 25 kg, to allow easy handling on board the mother ship. Key technical issues are electrical power and communications.*

Brief Deliverables:

1. Operates down to 250m depth
2. Carries 30W payload
3. Endurance of 2 Hours
4. Cruise Speed – 1ms (max speed 4ms)
5. Total mass under 25kg

On top of the deliverables stated in brief there are a number of deliverables that while less easy to define are no doubt equally important. These are as follows:

Key Deliverables:

1. Electrical system to control both payload and AUV
2. Dependable communication system (IMO doesn’t need to communicate with mothership much more like a serial display, status and maybe ability to manual mission abort)
3. Rugged watertight shell for subsystems fit for ocean

(Feel free to add more)

Problem broken down into subsystems, shown below both for easier consideration also easier to work on in parallel.

Sub-Systems:

1. Sensors
2. Navigation
3. Propulsion
4. Communication
5. Power