

Thank you for providing the Concept of Operations (ConOps). Now, I will outline the first step of the System-Theoretic Process Analysis (STPA), identifying the Losses, System-level Hazards, and System-level Constraints for the dive computer based on the ConOps provided.

Losses

1. **L-1:** Loss of life or injury to people
2. **L-2:** Loss of or damage to dive computer
3. **L-3:** Loss of or damage to divers' gear or other underwater objects
4. **L-4:** Environmental pollution or damage
5. **L-5:** Breach of data privacy or loss of sensitive dive data
6. **L-6:** Loss of mission or failure to collect necessary scientific data

System-Level Hazards

1. **H-1:** Dive computer provides incorrect depth measurement [L-1, L-2, L-4, L-6]
2. **H-2:** Dive computer fails to alert diver of required decompression stops [L-1, L-2]
3. **H-3:** Dive computer malfunctions and displays faulty ascent profile [L-1, L-2, L-3]
4. **H-4:** Environmental sensor failure leads to incorrect recording of parameters [L-4, L-6]
5. **H-5:** Dive computer loses connectivity during critical data transfer [L-5, L-6]
6. **H-6:** Dive computer battery fails during a dive [L-1, L-2]
7. **H-7:** Dive computer user interface becomes unreadable underwater [L-1]

System-Level Constraints

1. **SC-1:** Dive computer must provide accurate and real-time depth measurement [H-1]
2. **SC-2:** Dive computer must reliably alert divers of required decompression stops [H-2]
3. **SC-3:** Dive computer must calculate and display correct ascent profiles [H-3]
4. **SC-4:** Dive computer must accurately record environmental data [H-4]
5. **SC-5:** Dive computer must maintain connectivity during data transfer processes [H-5]
6. **SC-6:** Dive computer battery must be reliable and signal low power before failure [H-6]
7. **SC-7:** Dive computer's user interface must remain readable under various underwater conditions [H-7]

These Losses, System-Level Hazards, and System-Level Constraints constitute the first step of the STPA analysis for the dive computer as described in the ConOps provided.