* the competition was created in 2001 in partnership with the MTS ROV Committee
* designed to challenge students to apply the skills they learn to solve problems, with limited help, which benefits the learning process.
* goal is to create improved conditions to reverse the cycle of decline in world ocean health. MATE ROV missions focus on finding and creating technology solutions to limit the impacts of climate change for a sustainable future
* mission tasks focus on SOLUTIONS – from marine renewable energies to Blue Carbon, “prescriptions” for diseased coral, conservation programs for endangered species, and GO-BGC floats to monitor ocean health.
* The MATE ROV Competition is challenging its community to design and build a remotely operated vehicle and the necessary sensors, tooling, and complementary technologies
* Task 1 is based on the idea of installing floating solar panel arrays amongst existing offshore wind farms, it also helps minimize the increase of footprint and combined assets by including ROVs for cleaning and maintenance. The ROV should go into a docking station when done.
* Task 2 shows how climate change’s effects are not limited to oceans and coastal communities. It also impacts inland lakes and remote mountain villages. ROVs are used to monitor coral heads, to irradiate diseased areas of coral with simulated UV light, and to monitor and protect seagrass habitat from anchor scars.
* In Task 2B, to help underwater life, the ROV should help search for potential safe release areas to reintroduce endangered native Northern Redbelly Dace to. It should also help ensure the health and safety of Dillion Reservoir by inspecting buoy ropes for damage and recovering containers from the bottom of the reservoir, and monitor endangered Lake Titicaca giant frogs.
* Task 3 includes floats, which are used to monitor ocean health by collecting temperature, depth, and bio-geochemical information to better understand ocean processes and predict the consequences of climate change. In this task, a float should be designed and constructed to communicate with the mission station. The float should complete two vertical profiles and communicate the time to station.