EU RIA H2020 Proposal Template

ROBHOOT

Abstract

Eco-evolutionary biology teaches us how interactions and traits evolve and diversify across levels of biological organization, from neurons to populations. Evolving networks in nature with ever changing traits and connectivity patterns can inspire a new computing discovery for a global-sustainable knowledge-inspired society. Many studies have shown global sustainability could be achieved by strengthening transparency, communication, and rapid access to discovery technologies. Sustainability goals, however, strongly depend on global access to discovery-based knowledge. Yet, science-enabled technologies targeting knowledge discovery to reach sustainability goals are not in place. We propose an eco-evolutionary biology-inspired computing discovery technology for a knowledge-inspired society. We introduce evolutionary biology-inspired and artificial intelligence solutions to explore sustainability of the Seas in federated networks, networks composed by many distinct groups of individuals within species, humans and technologies exploiting resources in complex ecosystems. Knowledge discovery running on a federated network encompass a hybrid-technology to lay out the foundation of an open- and cooperative-science ecosystem for computing discovery in the face of global sustainability challenges. The project summarized here is not only set out to deliver knowledge discovery computation in federated networks, but also to provide the architecture of a science-enabled technology, as a proof-of-principle, to connect knowledge-inspired societies to global sustainability challenges.