In each of the following situations, use combinations of GoF and GoV patterns to achieve the goals stated. In each case, provide a brief discussion on the potential deficiencies of your proposed solution:

- In a given distributed system, subsystems interact in a complex and uncontrolled fashion. The goal is to design the system so that access to some of the services of each subsystem can be restricted dynamically (for a certain subset of its clients). These restrictions should be continuously reconsidered and reapplied at runtime, based on the status of the system (as to workload distribution) and the history of problematic accesses (e.g., erroneous service requests).

- A complex system consists of a hierarchy of subsystems, in which each high-level subsystem consists of a number of low-level ones. Classes reside at the bottom level of the hierarchy. At each level, related subsystems/classes interact in a complex manner, and the interaction algorithm varies depending on the states of the subsystems/classes involved. On the other hand, the state of each subsystem depends on the states of its constituents. The goal is to design the system so that coupling is reduced and interaction algorithms can be easily switched at runtime.