Type	SF-service	Description
Registration	RegisterProfile	Creates a new service description (profile)
	RegisterProcess	Creates a particular implementation (process) for a service
	ModifyProfile	Modifies an existing service profile
	ModifyProcess	Modifies an existing service process
	DeregisterProfile	Removes a service description
Affordab.	AddProvider	Adds a new provider to an existing service process
	RemoveProvider	Removes a provider from a service process
Discovery	SearchService	Searches a service (or a composition of services) that satisfies the user requirements
	GetProfile	Gets the description (profile) of a specific a service
	GetProcess	Gets the implementation (process) of a specific a service

Table 1. SF services

this service as $S4$ (message 2). Then agent $A1$ declares itself a provider for this new service with its particular service process and grounding (message 3). The SF registers this service implementation description with $SI24$ identifier (message 4). Lastly, agent $A2$ adds itself as an additional provider for the *SellBook Profile* service. It represents an alternative provider with the same process and grounding as $A1$, so it just adds itself as a provider of an existing service implementation (message 5).
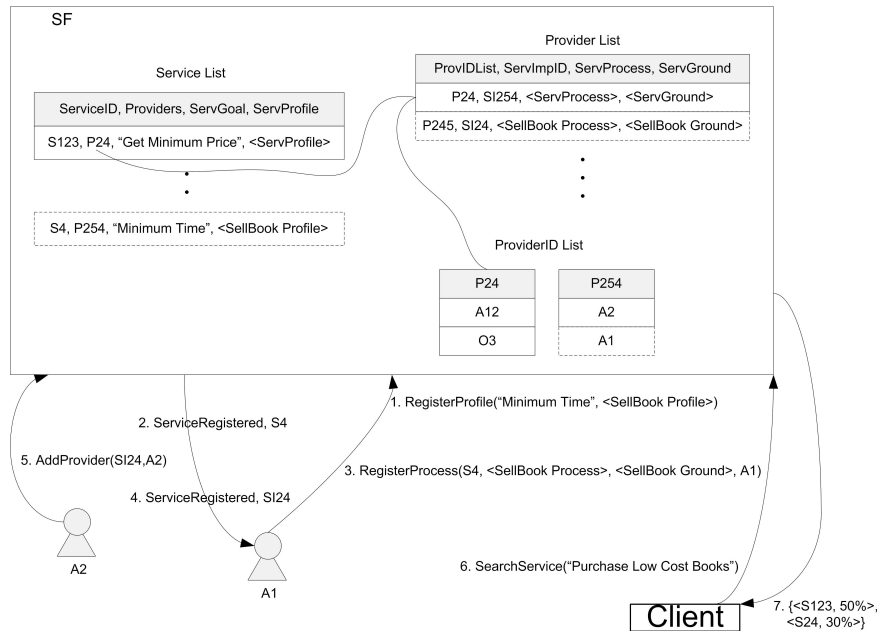

Fig. 2. Example of SF usage

of OMS services is detailed in Table 2. These services deeply described in Appendix A.2.

Type	Subtype	OMS-service	Description
Structural	Registration	RegisterRole	Creates a new role within a unit
		RegisterNorm	Includes a new norm within a unit
		RegisterUnit	Creates a new unit within a specific organization
		DeregisterRole	Removes a specific role description from a unit
		DeregisterNorm	Removes a specific norm description
		DeregisterUnit	Removes a unit from an organization
	Information	InformAgentRole	Indicates roles adopted by an agent
		InformMembers	Indicates entities that are members of a specific unit
		QuantityMembers	Provides the number of current members of a specific unit
		InformUnit	Provides unit description
		InformUnitRoles	Indicates which roles are the ones defined within a specific unit
		InformRoleProfiles	Indicates all profiles associated to a specific role
		InformRoleNorms	Provides all norms addressed to a specific role
Dynamic	Basic	RegisterAgentRole	Creates a new *<entity, unit, role>* relationship
		DeregisterAgentRole	Removes a specific *<entity, unit, role>* relation
	Compound	AcquireRole	Requests the adoption of a specific role within a unit
		LeaveRole	Requests to leave a role
		Expulse	Forces an agent to leave a specific role

Table 2. OMS services

Structural services The OMS provides a group of services for registering or deregistering structural components, specific roles, norms and units. It also offers services for reporting on these components.

As explained before, a *role* represents a position within the unit in which it is defined. It is related to some interaction norms, imposed by the unit structure and its specific position within the unit, as well as some behavior norms, which specify its functionality (services that it needs and offers), restrict its actions (prohibition, obligations and permissions) and establish the consequences of these norms (sanctions and rewards).

Therefore, a *norm* indicates the obligations, permissions and prohibitions of roles related to service registering, requesting and fulfillment; service composition or quality of service results. In this way, a norm defines those restrictions that cannot be expressed by means of service preconditions or postconditions.

Finally, a *unit* represents groups of agents and establishes the topological structure of the system. It is also a recursive concept, so units can be defined within other units. It enables the representation of organizational structures like hierarchy, matrix, coalition, etc [7]. Furthermore, it indicates what the structural positions of the system are (i.e.