Task: “Michael: Write up thoughts on classification of entities as “objects” or “processes” in the ontology; and also the distinction between “contracts” and “policies.””

## On classification of entities as “objects” or “processes”

To my understanding of how SOA-RM and SOA-RAF represent an entity, it is an artefact that depicts a business meaning of nouns and has its own behaviour. An entity may contribute an outcome of its work/activities in any type of the combined work of several entities. The most popular combinations are cooperation and collaboration.

Cooperation of entities is a form of joint work where each participant contributes outcomes of its work/activities as-is, independently from other participants. Collaboration of entities is a form of joint work where each participant makes the goal of the joint work its own goal contributes outcomes of its work/activities. In general, it is assumed that a collaborative goal may require a participating entity to change its internal organisation or operations.

From modelling perspectives, an object is the closest analog of an entity. This, however, does not necessarily relate to the Principles of Object Orientation.

A participation of an entity in a combined/joint work can be organized in one of two forms: in a form of a process or in a form of adaptive case. The major differences between these forms, to mention a few, are:

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|  | Business Process | Adaptive Case |
| Outcome | Concrete and mandatory at certain level of quality | Desirable, intended, quality is approximate |
| Logic of execution | Predefined | Approximate |
| Realisation | Each step is predefined and can interact with the outside world via predefined interfaces and interface SLAs | Some steps are predefined, some other steps may utilise human intelligence |
| Repeatability | Strictly Repeatable | Somehow repeatable |

The major conclusion is: not all or every activity of an entity constitutes a process where it operates. For example, a service contract is an entity; contracting a service or setting the contractual agreement may be a process if it encounters a predefined end-to-end logic; otherwise it may be an adaptive case.

In general, a contemporary understanding of a process has changed and now it addresses only logic of several steps that result in predefined outcome. At each step, some interactions with external environment may take place via predefined interfaces and related SLAs. Who interacts with the process’ step/logic, what this counterpart does provide the process with information or execute received instructions is immaterial for the process. [Historically, when several activities were joint into a process and its logic was created, this produced a new value that none of the activities had by itself. This has allowed abstracting those activities into process intermediary interfaces.]

IMO, an entity is always a noun (e.g. “signature”) or gerund (e.g. “signing”). The letter outlines a fact that the entity has its specific behaviour, but it does not mean that this entity participates in a process or case of any type. A process or case is a set of activities or verbs. One activity or action does not constitute a process or case.

## Distinctions between “contracts” and “policies”

In the current version of SOA RAF, a difference between a contract and a policy is vanishingly small. This obfuscates some cases of the use of a contract versus a policy. Below is a list of similarities and differences between contracts and policies as I understand it.

1. Beside the contract is an agreement between parties while a policy is usually a single-party declaration, both of them should be controlled and even enforced. When a policy is naturally enforced on other parties, a contract may be enforced voluntarily by one or all parties participating in the contract/agreement.
2. When two or more parties participate in the realm regulated by certain policy, it is publicly known in this realm at least. When an agreement/contract between two or more parties is established, it requires special considerations and consents for both making the fact of the contract and its content public in a realm.
3. In the shared realm, public policies may refer to each other with no limitations (with, probably, one exception of circular references). In a contrast, contracts may refer to each other only if all of them are the agreements of the same participating parties. Without this constraint, publicly, contracts are not cross referential. Also, a contract may freely refer to the public policies in the certain realm while the policies in the same realm may not in general refer to the contracts even if they are agreed by the members of that realm.

Talking about contracts and policies related to services, SOA RAF state that an execution context (EC) comprises policies where interactions between the consumer and service take place. IMO, SOA RAF does not clearly explain that the EC has to also include the policies that impact the execution of the service (in spite of my comments made a few years ago on this subject). For example, a consumer interacts with the service interface deployed in the UK while the service itself (service body) belongs to e.g. Libya; according to the (fictional) USA law, interactions with the interface situated in the EU is OK, but an engagement of Libyan service is prohibited.

Thus, I propose to specify an EC as a collection of policies and regulations that affect both interactions/communications between the consumer and the service and the service execution.

A Service Contract, according to SOA RAF, has to be an agreement between a consumer and a service/provider. The SOA RAF states that a Service Contract may be implicit, i.e. the one that does not require preliminary negotiations between parties, and explicit, i.e. the one that requires preliminary negotiations. In the latter case, the Service Contract may contain policies, as the contract constraints, specified by both consumer and provider. This, however, does not mean that the provider is obliged to accept any consumers’ policies or modify the service respectively. A general practice of using the services is in that the services are modified because of explicit contracts.

Here is one aspect that I think is omitted in the SOA RAF. A Service Description and Service Contract enumerate all public interfaces available and accessible (respectively) to the consumer(s). Since service interfaces may be of different type/nature, the SLA of one type of interface may differ from other SLA for other interface type. At the same time, these SLAs cannot be defined, provided and ‘guaranteed’ in a vacuum – they have to reflect the EC where the interactions are made via them. Real world examples of this are: in Fidelity Investments the same Funds Share Price service calculated different prices for the day depending on whether it was used in the UK or USA. Similar effect had Barclays with its Equity Shared services when they worked in the EU and in Singapore. If a consumer changes the EC, the provider does not need to guarantee specified interface SLAs.

Thus, I’d propose following refinements:

1. Include EC in the Service Description and Service Contracts
2. Make interface SLAs dependent on EC in the Service Description and Service Contracts