Preserving the Intent behind

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The following considerations result mostly from our experience in the Shaman integrated project (http://shaman-ip.eu/shaman/) and more specifically how we view some aspects of our contribution to Shaman in relation with what other partners have described or hinted at in terms of preservation policies.

For instance, for Reagan Moore[1], "The emergence of policy-based data management systems has made it possible to consider preservation as one of the stages of a data life cycle. Each stage represents a consensus by a user community on the purpose of the collection, the policies that will be used to control desired collection properties, the procedures that will enforce the policies, and the metadata or state information that is needed for a self-consistent system. Virtualization of the data life cycle corresponds to tracking the evolution of the policies, procedures, and state information and providing mechanisms for each new user community to re-purpose the collection. Long term sustainability then corresponds to re-purposing of a collection for use within a new institution, and uses the same mechanisms that support evolution between data life cycle stages."

In this view each data life cycle stage re-purposes the original collection and stages correspond to addition of new policies for a broader community.

Our hypothesis is that, in many areas esp. outside cultural heritage, **preserving the intent** behind activities or projects, is at least as important as preserving the associated digital data.
Project policies are the natural means to describe an intent in a sustainable implementation-independent way, after the project actors have reached an agreement. In addition, the consensus building process, through which actors have reached this agreement, is in itself a valuable resource to inform the intent. Hence we propose not only to preserve the final agreed

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[1] Reagan Moore, Virtualization of the Data Life Cycle, TCDL 2010, May 17, 2010 – May 18, 2010, Austin, TX.

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upon policies, but also to keep track of their evolutions or of any resources that may indirectly explain such evolutions. This will document the rationale behind the final consensus and enable the (long term) understanding of the captured intent

This is all the more necessary as projects involve multiple domains of expertise, or multiple communities of actors with different backgrounds, different interests or different views.

For instance, we may view SLA (Service Level Agreement) negotiations (e.g. between a content provider and a preservation service provider) as driven by the need to establish a compromise between two initial policies, the first one based on the content provider intent (domain policy, independent of implementation constraints), the second based on the service provider capacities (system policy, based on the system capacities, in terms of support, auditing, etc.). The final SLA is a resulting consensus (contract), after negotiations have stabilized the various refinements and constraint relaxations (technical, commercial, etc.) that enable a compromise between the two parties. Keeping track of the negotiation process, in terms of policy evolution, is a natural way to preserve the long term understanding of the motivation behind a specific contract.

Another scenario under development in Shaman, deals with mechatronic assembling, which involves collaboration between two disciplines (or subdomains): ECAD (electronic computer-aided design) and MCAD (mechanical computer-aided design). As in many other areas, a core business problem with ECAD/MCAD lies in the difficulty to shorten product development time by parallelizing project development across subprojects. In Shaman, we contemplate the possibility to derive collaboration policies from the tracking of collaboration sessions.

We are primarily interested in exploring further those ideas, especially by finding out how they resonate within different communities, from digital preservation proper to various domains of applications, say from algorithm design to manufacturing or healthcare.

This would include refining or even questioning the relation between *intent*, *consensus* and *policies,* especially when the intent is associated with interactions at the border of multiple

domains, which may all have their established practices and standards, but not operating across domains, where the consensus is built.

Identifying and scrutinizing some scenarios for those application domains, at various degree of refinement or focus, would be extremely valuable to explore methodologies for the preservation of consensus building activities. This should happen at a sufficiently abstract level so that the captured traces of activities will durably provide the necessary background to preserve the rationale behind decisions made during the interactions across domains. Next, we could envision description languages for the corresponding policies and methods to infer policies from traces of consensus building activities.