The SOCIETIES project aims to investigate and address the gap between pervasive and social computing by designing, implementing and evaluating an open scalable service architecture and platform for Pervasive Communities.

A Pervasive Community is inherently context-aware, self-organising, self-improving and capable of pro-active behaviour aiming to optimise and personalise the pervasive experience of an entire community. In addition to the resources controlled by its individual members, a Pervasive Community may also provide public access to its devices, services and resources. The notion of Cooperating Smart Spaces (CSSs) has been introduced so as to extend pervasive systems beyond the individual to dynamic communities of users. The SOCIETIES functionality can be categorised in terms of three broad phases each of which contributes to the formation of CSSs which are: Discover, Connect and Organise.

**SOCIETIES OBJECTIVES**

The goal of SOCIETIES will be achieved through four key objectives:

- To facilitate the creation, organisation, management and communication of communities via Cooperating Smart Spaces, where pervasive computing is integrated with social computing communities;
- To provide an enhanced user experience for both individuals and entire user communities, based on proactive smart space behaviour and dynamic sharing of community resources across geographic boundaries;
- To design and prototype a robust open and scalable system for self-orchestrating CSSs;
- To evaluate, through strong involvement of end-users, the usefulness and acceptance of the developed CSS software via three user trials with the three distinctive groups.

**SOCIETIES USER GROUPS**

- Enterprise Users: Enterprise communities play an important role in bringing together people, goods and services within global markets, local ecosystems or large organisations. The CSS concept will bridge the gap between smart IT systems and established enterprise community activities.
- Students: Students adapt easily to new technology, and since communication and social networking play an integral role in their lives, they are most likely to adopt CSSs, using them in ways both foreseen and unforeseen.
- Disaster Relief Experts: The ability to rapidly form a disaster management community from all the closely located relief teams can help save lives, property, and the environment.

**CONTACT INFORMATION**

- **Project Coordinator:** Kevin Doolin  
  kdoolin@tssg.org
- **Technical Coordinator:** David McKitterick  
  davidx.mckitterick@intel.com
- **Project website:** http://www.ict-societies.eu/
- **Twitter:** http://twitter.com/ict_societies
- **Facebook Page:** http://www.facebook.com/ICTSOCIETIES

SOCIETIES is funded by the European Commission under FP7.
LEARNING
Learning enables SOCIETIES to acquire knowledge about individual users and communities of users by monitoring their actions over time. Whilst in most social media such knowledge would be used to generate revenue via targeted advertisements, etc., in SOCIETIES the driver is to help the user to invoke and personalise relevant system components and third party services. Learning obviates the need for users to enter all this information manually and the community aspect enables each user to capitalise on the knowledge captured about other similar, users. Learning underpins many of the other innovations in SOCIETIES.

COMMUNITY PREFERENCES
Community preferences enable SOCIETIES to build templates, or stereotypical sets of preferences, for a whole community based on the preferences of individual community members. This can be particularly helpful to new members of a community who may "inherit" all, or a subset of, the preferences of the community when they join and benefit from the "wisdom of the crowd". SOCIETIES is also able to derive community preferences from hierarchies of communities. Current social media do not support community hierarchies or the inheritance of properties from the circles/groups/networks, etc. to which a user might belong.

USER INTENT
For any system to react appropriately for a given user it needs to be aware of what that user is attempting to achieve i.e. the ultimate goal of the user’s actions. In systems which allow users to interact freely and navigate their own way through the available options, user intent is not easy to discern. Current social media make no attempt to do so. SOCIETIES captures this knowledge by monitoring user behaviours and the context in which those behaviours occur. Observing temporal sequences of user actions and context cliches or snapshots can permit the discovery of past, and prediction of future, goals.

COMMUNITY ORCHESTRATION
The richness of the pervasive communities supported by SOCIETIES presents many new challenges for the user in discovering, managing and organising the communities to which they belong. This is primarily due to the physical resources (devices, sensors, servers) of pervasive communities. These add "real world" impact to a community in SOCIETIES which current social media are only just beginning to explore. In order to maximise the value to users, community orchestration helps users to identify and discover relevant communities and manage the intelligent formation, organisation, membership and termination of communities.

COMMUNITY CONTEXT
Context awareness lies at the heart of the pervasive computing in general and the pervasive communities of SOCIETIES in particular. Current context models do not support the management of context for dynamic communities of individuals in large scale systems. Community context in SOCIETIES supports context conflict resolution and context inheritance for communities thus further enabling users to benefit from the "wisdom of the crowd". Furthermore, SOCIETIES is not only able to form communities based on users with similar context, it can also contribute to the lifecycle management of these communities as changes occur in users’ context.

LOCATION
Of particular importance amongst the rich set of context attributes handled by SOCIETIES is location. Social media have begun to take advantage of this by enabling users to inform others of their location automatically and to "check in" to popular locations. The full benefits of location-based services, however, have yet to be realised because of the lack of precision in the data, particularly for indoor locationing. SOCIETIES supports a variety of locationing systems, of which "WiFi sniffers" are perhaps the most innovative. These can pinpoint indoor locations very accurately by independently monitoring the signal strengths between users and access points.

TRUST
As the number of contacts, pervasive services and devices available to a given individual proliferates it will become ever more important for users to assess the trustworthiness of the entities with whom they interact. SOCIETIES supports robust and authenticated trust assessment mechanisms. Aspects of trust (e.g. purposeful or referral) are formalised in SOCIETIES and extend well beyond the recommendation systems of current social media.

PRIVACY
SOCIETIES has been designed and developed with a "privacy by design" approach. This means that privacy protection is fully integrated into the platform rather than being an add-on. The privacy protection systems provided by SOCIETIES help the user to manage their personal data and its disclosure. SOCIETIES supports, and enforces, negotiation between user preferences and service/community policies, data disclosure with personalisation obfuscation, multiple identity management and selection and privacy assessment and auditing.

Project website: http://www.ict-societies.eu/