OGC Project Document  **15-007**

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| TITLE: | | PlanningML Standards Working Group Charter | | |
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| CATEGORY: | | Standards Working Group | | |

General Call to be included in the participation announcement.

To: OGC members & interested parties

A new OGC Standards Working Group is being formed. The OGC members listed below have proposed the OGC PlanningML SWG.  The SWG proposal provided in this document meets the requirements of the OGC TC Policies and Procedures.

The SWG name, statement of purpose, scope, list of deliverables, audience, and language specified in the proposal will constitute the SWG's official charter. Submissions of technology for consideration by the SWG, and the beginning of technical discussions may occur no sooner than the SWG's first meeting.

This SWG will operate under the OGC 2007 IPR Policy. The eligibility requirements for becoming a participant in the SWG at the first meeting (see details below) are that:

1. you must be an employee of an OGC member organization or an individualmember of OGC;
2. the OGC member must have signed the OGC membership agreement;
3. you must notify the SWG chair of your intent to participate to the first meeting. Members may do so by using the "Join this SWG" button on the SWG's public page at [provide URL]; and
4. you must attend meetings of the SWG. The first meeting of this SWG is at the time and date fixed below. Attendance may be by teleconference.

Of course, participants also may join the SWG at any time. The OGC and the SWG welcomes all interested parties.

Non-OGC members who wish to participate may contact us about joining the OGC. In addition, the public may access some of the resources maintained for each SWG: the SWG public description, the SWG Charter, Change Requests, and public comments, which will be linked from the SWG’s page.

Please feel free to forward this announcement to any other appropriate lists. The OGC is an open standards organization; we encourage your feedback.

# Planning Markup Language SWG (PlanningML SWG)

Planning Markup Language SWG (PlanningML SWG)

# Purpose of this Standards Working Group

The purpose of this PlanningML (PML) Standards Working Group is to develop an application schema of OGC XML and progress the document to the state of an adopted OGC standard. The goal of this candidate standard is to establish a common framework schema for interoperability between disparate applications, especially in the shared data models and processing models, and smooth transitions and process flows typical of urban planning. The particular focus of the candidate standard is to define a standardized markup language to define the set of rules characterize several types of urban plans at several level (from large scale to local plans).

The benefit of such a standard would be significant during the execution of changes and maintenance of running ICT systems use for planning purposes. The candidate standard would therefore facilitate a more dynamic paradigm consistent with concepts such as Smart City, Smart Grid. This SWG will start from the discussions held on the occasion of the OGC UP DWG workshops in Firenze, Italy (held on the 21st of November 2014) and Tokyo, Japan (on the occasion of the Smart Cities Summit / OGC TPC held on the 3rd of December 2014), further integrated into the White Paper session during the OGC TPC to be held on 9th of March 2015 in Barcelona, Spain.

Urban planning is the design and regulation of the uses of space that focus on the physical form, economic functions, and social impacts of the urban environment and on the location of different activities within it ([Encyclopedia Britannica](http://www.britannica.com/EBchecked/topic/619445/urban-planning)). In general, the purpose of urban planning is to improve the human geography of the designed environment; that is to facilitate how human activity affects or is influenced by the geography of urban space, including transportation, communication and utility networks, to ensure the orderly development and optimal use of urban space.

In today’s world this also means to understand and facilitate the communication of information about the urban space with the users of that space, to use this to optimize those interactions and potentially adjust the designs of that space to better serve those who relate to that space (e.g. people living, working or visiting a given space).

Urban planning has been thought of in the past as a government function, but the improvement of communication, awareness of citizens on their role as drivers for planning and the rise of social media is changing that. The public, in general, are no longer pleased to be passive in acceptance of authority. Because of this, and other societal trends, the future of Urban Planning will depend on “crowd sourcing” decisions and plans which affect residents. The planning, execution, and maintenance of the urban infrastructure in the purposes to which it is involved will have to balance:

* Communitarian goals (“the common good”) with individual rights (e.g. privacy);
* Equity with automation-induced efficiency;
* Efficient top-down management with public involvement, that is stakeholders and local communities

Thus, urban planning is an ongoing process for the design and improvement of the urban environment aimed at responding to the continuously evolving needs and expectations of the communities and implemented for the benefit of the inhabitants. A “Smart City” invests in human and social capital, traditional (physical) and contemporary information, as well as communications technology (ICT) infrastructure to sustain quality of life in the urban environment. Aspects of the “Smart City” can also be seen in the technologies that support Augmented Reality (AR), Smart Grids, Sensor Web Enablement (OGC SWE) and the Internet of Things (IoT). Applications like LBS (Location Based Services), navigation (indoor and outdoor) and “Big Data” Analytics can play important roles in satisfying these targeted requirements. They also provide flexible and adaptable tools responsive to a growing citizen demand.

Starting from these assumptions, the SWG will define a standardized encoding mechanism to formally model legal requirements and preconditions for urban transformations, such as normative urban plans, easing the process of fast-track developments for planners and local administrations (end-goal). The approach proposed by the SWG substantially differs from other standards used in the urban planning domain, most notably CityGML, in that it does not focus on the result of the planning act but on the encoding of all the spatial “rules” that are contained within different urban plans. The availability of PML would allow developing applications, designed for planners at various levels, capable to adapt to different planning tools and geographical areas (with consequently different rules) based on XML documents containing a structured description of those rules. Furthermore PML would also allow extending the concept of interoperability at the planning level (for instance between plans in different regions). This latter issue becomes particularly relevant in an increasingly globalized world, which is characterized by increasingly trans-border planning and harmonization support. Being able to effectively support cross-border planning in an interoperable way would indeed help improving the competitiveness of regions.

PML will have to account for different planning levels (or layers), as well as for inter-level dependencies and constraints. The need to manage those rules or constraints in a dynamic and “parametric” manner, needs to be addressed through the development of the urban Planning Mark-up Language (in short PML) candidate standard together with a reference implementation.

The development of such a standard encoding would be significant. For instance it would allow the development of ICT system capable to simulate, in a very agile manner, the impact of changes of urban regulations at territorial level (for instance to assess the effect of being able to build an extra floor in areas of the city that meet specific requirements). Furthermore, it would allow simulate the implications of a urban planning instruments, already adopted within a given geographical area, in completely different contexts. PML-compliant software in fact could “load” the new specifications and simulate the effect induced by the application of planning principles already adopted in a given city, within another urban context, for instance generating a new CityGML model of the city if it had been applied those new urban constraints (e.g. showing taller buildings wherever the new plan would allow building higher buildings on specific areas). In turn, such the city model generated could also be used to assess environmental impact (e.g. in terms of solar potential, urban ventilation, traffic flow etc.) that the urban plan would have on the city.

The SWG has a persistent character in order to enable the escalation of work on topics related to the broader impact scale of alignment and interoperability of urban planning systems / provisions / policies / regulations inside the Planning Markup Language (PML) Encoding Standard at the same time.

The SWG will ensure that all changes are consistent with the OGC standards baseline and business plan.

# Scope of Work

The Scope of Work (SOW) for this SWG is to develop a candidate standard of an XML 1.0 application schema for spatial planning and progress it to the state of an adopted standard by using OGC RFC process as follows:

- development of a candidate of OGC standard for spatial planning: this candidate standard, called tentatively PML will provide an XML application schema for exchanging information related to spatial planning,

- gathering comments from SWG members on the working draft and reflecting them to the candidate standard,

- submitting the candidate standard to OAB for review and subsequent release for the 30-day public comment,

- resolving the comments from OGC members, and

- submitting the final version of candidate standard to the OGC TPC for voting.

The aim of PlanningML is to formally model, structure, harmonize and standardize regulatory provisions for urban and territorial planning, including cross-level constraints and dependencies, in order to provide an interoperable framework for spatial planning. Given the different types of spatial planning identified around the world (regional and economic planning, land use planning, urbanism etc.) it is very difficult to define a global planning standard because of the differences in planning cultures. These differences are often caused by the fact that countries have different government systems, administrative units etc. which determine a specific spatial planning system. For this reason, the activities of the SWG will be initially focused on the specific case of urban normative planning – i.e. land use regulation plans – as these plans are deeply connected with cadaster and property rights issues, making it easier to draft a common platform that integrates them.

PML will provide a common schema framework for interoperability between disparate applications, especially in the shared data models and processing models and smooth transitions and process flows including planning, execution of changes and maintenance of the running ICT system which will support applications such as various city-services (smart grids, smart water/waste management schemes, sanitation, intelligent buildings/transportation, utilities etc.). This framework seeks to unify examples of the *au courant* wave of applications and trends in geographic information, for determining a better and more consistent normative planning system, by providing a base legal XML template to share across boundaries.

Baseline steps in determining this process need to address the identification of the different planning levels, refer to a standardized nomenclature (or propose it wherever this is not available) as well as the relationships, constraints and dependencies between these different planning levels, to help authorities determine the most effective system of regulatory planning. Narrowing down the process, PML will have to start from the methodology of how the planning laws, norms and regulations are actually planned: such dissection directly leads to the definition of the norms of application referenced to that specific law. Further on, during the reconstruction process, the PML v.1.0 could provide input on how to optimize the process.

Setting up the common grounds for planning regulations relies on addressing a framework of standardization of the various steps inside the planning process, such as data collection, analysis, etc. A general “standardized framework” on methodologies with inflexion points (yes-no) can be more easily adapted to the different planning systems, hence, a standardization of the planning processes**.** This methodology based on inflexion points can also respond to the main challenge in defining a normative planning standard, which is the difference in property rights (Roman vs. Anglo-Saxon).

## What is out of scope?

Strictly the normative planning and regulatory framework present sufficient feasibility in being addressed through the deployment of this proposed candidate. Standardizing strategic planning is highly unlikely to be achieved, given the different types of Spatial Planning (Regional and Economic Planning, Land Use Planning, Urbanism etc.), especially because of the differences in planning cultures (often originating from different political systems), highly present inside the national laws; within the scope, a global standard should thus be flexible enough to adapt to the planning legislation of each state.

The work of this SWG will start from a discussion paper on Requirements and Space-Event Modeling for Indoor Navigation that will be edited by the founding members of the SWG.

## How it is to be Determined when the Work of the SWG has been Completed?

As a persistent SWG, the voting members will have to vote to dissolve the SWG. The basic work of the PlanningML (PML) SWG will be completed after the following milestones have been achieved:

1. The SWG has completed evaluation and incorporation into the candidate standard of all comments received during the public comment period.

2. Approval by the SWG membership of a recommendation to submit the document to the TPC for consideration as an OGC Adopted Standard.

3. The candidate standard has been approved by the OGC Technical and Planning Committees as an Adopted OGC standard.

# Description of deliverables

The following deliverables will result from the work of this SWG:

1. A general methodology on the process of creating a standard for the definition of the PML: data collection – state-of-the-art – regulations – impact assessment etc.
2. Candidate standards for the definition of the Planning Markup Language (PML) Encoding Standard for submission to the OGC TPC. As part of the definition process, the standard may be split into multiple parts, typically a core PML complemented by several thematic modules.
3. Corresponding schema documents associated with the PML.
4. A final version of PML standard documents for the submission to the TPC.

The SWG will report the version(s) of PML the SWG is working on in its reports to the OGC TPC including the anticipated schedule.

The tentative schedule of the activities for this SWG is:

1. SWG kickoff meeting: by Mar. 2015
2. PML v 0.1: by June 2015
3. SWG internal review of the document and preparation of an updated version v0.2: by Aug. 2015
4. Revision for version v 0.3: by Sept. 2015
5. SWG voting for submission to 30 days public comment period: Oct. 2015
6. Public comment period: from Nov. 1 2015 to Dec. 1, 2015

7. Reflection of public comments and revision for version v 0.4: by Feb. 2016

8. SWG internal voting for formal submission to OGC TC: Mar. 2016

9. In case of approval for the formal submission to OGC TC, the final candidate standard will be sent to OGC TC for voting: by April 2016

# Business Value Proposition

This SWG aims to provide a common schema framework for interoperability between disparate applications, especially in the shared data models and processing models and a smooth transitions and process flows including planning, execution of changes and maintenance of the running ICT system that will support applications line Smart City, Smart Grid and continuous indoor/outdoor navigation.

This covers a wide spectrum of application areas such as territorial and urban planning, land use planning, e-Government, etc. as well as various city-services (smart grids, smart water/waste management schemes, sanitation, intelligent buildings/transportation, utilities etc.), and even wider-scale territorial management and even trans-border management of land use and protection, disaster preparedness, ecological preservation, etc. The latter could potentially witness a large-scale uptake in public national, regional and local administrations.

The standardization activity could contribute to the integration of planning regulations both vertically (the systems of planning) and horizontally (land use planning, environmental planning, mobility planning). The availability of PML could help develop ICT systems capable to correlate different policies, programmes and complex projects developed by the local public authorities. Such a development would therefore contribute to improving governance models, to definition of better management policies for “project portfolios”, to better land use planning regulations (the possibility of flexible regulations and introducing new planning instruments through means of ICT solutions). The availability of PML would for instance help create systems capable to highlight investment opportunities (accounting for regulations on different areas, zoning of economic / fiscal areas etc.). A further element of the value proposition of PML include the possibility to create ICT tools to monitor different indicators and to assess impact of different policies / programmes, facilitating the definition of possible mitigation actions.

This initiative concerns to aid the multidisciplinary and fragmented geographic information community through means of integrating business rules, standards, interfaces and conformance processes deployed under the UP DWG in a broader spectrum of business cases, relying on the above mentioned interoperability.

In prospect, this could also provide reference for developing guidelines that address business cases and other intervention strategies available via consortia approaches which best support the infrastructure of the information community to come together and to inform information community consumers.

# IPR Policy for this SWG

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# Anticipated Participants

Those involved in the design, development, implementation, or use of elements listed above in "Scope of the Work". This includes urban planners, geographers, architects, public servants, search service providers, prospective users of search services exposed as XML, information architects and bibliographic, metadata, and content provider involved in the future use of elements.

The targeted participants of the PML SWG are those involved in the planning policy cycle (proposal, definition, adoption, regulation), design, development, implementation, and use of planning systems / models in terms of both a common semantic information model and a common format for the storage and exchange of 3D city data, planning policies and norms of regulation.

PlanningML is targeting the following example application areas:

* Spatial, Territorial and Urban Planning,
* Land Use Planning, 2D/3D Cadasters (Zoning, Permitting, e-Government),
* Environmental Protection, Landscape Planning,
* Disaster Management, Ecological Restoration/Reconversion,
* Historic Preservation/Restoration in Architecture and Landscaping,
* Transportation / Traffic Planning / Management (Vehicle, Pedestrian, Cycling),
* Facilities Management Planning/Design (Infrastructures, Roads, Limited Public Access),
* Utility Service Provision (Smart Grid, Smart Water/Waste Management, Sanitation, Etc.)
* Telecommunications (Mobile), Innovation
* Public Safety, Security, Privacy,
* Augmented Reality (‘Visual’ Identification of Location),

Implementers of the Planning Markup Language (PML) Encoding Standard are, for example, the following organizations:

* Creators of 3D city models (i.e. cities, national mapping organizations and private data providers),
* Consulting companies performing policy assessments,
* GIS, CAD and BIM vendors, and
* Mass market software vendors interested in geographic based applications and the consumer.

# Other informative information about the work of this SWG

a. Similar or applicable standards work (OGC and elsewhere).

* Tracing similar and/or adjoining standards or initiatives of such matter, e.g. ISO 37120:2014 Sustainable Development of Communities – Indicators for City Services and Quality of Life.
* Ongoing work in the UP DWG, the 3DIM DWG and its associated SWGs

The following standards and projects may be relevant to the SWG's planned work, although none currently provide the functionality anticipated by this committee's deliverables:

- OGC OpenLS Standards Suite

- OGC CityGML

- BuildingSmart IFC

The SWG intends to seek and if possible maintain liaison with each of the organizations maintaining the above works

b. Will this be a persistent SWG?

Yes. The persistent character of the SWG enables the SWG to work on topics related to the broader impact scale of alignment and interoperability of urban planning systems / provisions / policies / regulations inside the Planning® Markup Language (PML) Encoding Standard at the same time.

c. Details of the first meeting

The PML SWG kickoff meeting and teleconference will be held on Monday, 9 March, from 9:00 to 18:00. The meeting will take place during the March 2015 OGC TC meeting in Barcelona, Spain. Call-in information will be provided to the SWG's e-mail list and on the portal calendar in advance of the meeting.

d. Projected on-going meeting schedule

The work of the SWG will be carried out primarily by email and conference calls, with face-to-face meetings in principle at each of the OGC TC meetings as defined by the chair. Other face-to-face meetings may be called if this can expedite the work of the SWG.

e. Supporters of the Proposal

The following people support this proposal and are committed to the Charter and projected meeting schedule. These members are known as SWG Founding or Charter members. Once the SWG is officially activated, these individuals are immediately “opted-into” the SWG and have voting rights from the first day the SWG is officially formed.

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| --- | --- |
| Name | Organization |
| John Herring | Oracle USA |
| Giuseppe Conti | Trilogis srl, Italy |
| Pietro Elisei | Urbasofia SRL, Romania |
| Martin Ford | GIStandards, UK |
| George Percivall | OGC, USA |
| Franco Vico | INU, Italy |

e. Convener(s)

* John Herring, Oracle USA
* Giuseppe Conti, Trilogis srl
* Pietro Elisei, Urbasofia SRL
* Martin Ford, GIStandards