All Fields marked with * are mandatory.

Change Request #:	36
Assigned OGC Document #:	09-184
Name:	*Edward Nash
Organization:	*Rostock University
Email:	*edward.nash@uni-rostock.de
Document Name/Version:	*Web Processing Service / 1.0.0
OGC Project Document:	*05-007r7

If this is a revision of a previous submission and you have a Change Request Number, then check here: ☐
Enter the CR number here: [ ]
Enter the Revsion Number that you are revising here: [ ]

Title:	*Improve specification of complex data input/output formats in process description
Source:	*Edward Nash / Rostock University
Work item code:	
Category:	* C (Functional modification of feature)

Reason for change:	*

In WPS 1.0.0 the format of complex inputs/outputs to processes was
specified using a tuple of (mimeType, encoding, schema).

This allows only a very broad specification of the data format, and
it is not possible for a client to correctly provide data using only
this information, e.g.:
- for an XML input it may be necessary to provide a specific root
element. This cannot be specified.
- for an XML input it may be necessary to provide a specific
structure under the root element (e.g. a gml:FeatureCollection
containing elements from a particular application schema, or features
having a particular class of geometry attribute such as surface). This
cannot be specified.
- for a coverage input it may be necessary to provide a certain
number of bands.
- official mime types are not available for all geographic data types
(e.g. GeoTIFF is not fully described by image/tiff).

Identification of the correct format was only possible through

	manually inspecting the natural-language description (abstract) of the input/output. Additionally, for each input/output it is necessary to repeat the data type definition - e.g. for a process accepting 3 inputs and one output, all with an identical format, the same list of accepted and default formats must be given in total 4 times.
Summary of change: ⊘	* Provide a mechanism whereby the complex data format can be specified more precisely. Depending on the input type this may be based on WCS or WCPS, SWE or other concepts (e.g. Schematron or XPath could be used for specifying required XML structures). Due to the wide range of data types a WPS may be expected to handle, the structure must be flexible whilst not being so broad as to be unusable. Regarding part two of the reason for change, a means to re-use either a local format definition (e.g. by having a data format definition block in the process description) or to reference an external format definition (e.g. by URN) should be provided.
Consequences if not approved: ⊘	The ability to exactly specify the required format of a complex data input or the format produced for a complex data output will be compromised. The possibility of successfully composing WPS service chains will be reduced as it will not be possible to reliably identify whether the output from one process may be used as the input of a further process. The main detailed description of the data format will still only be in the natural-language description of the input/output, making reliable client-side validation of the data impossible. The second part of the change request would make process descriptions less verbose, and referencing format definitions by URN should improve interoperability by providing a central definition of common geographic data formats.
Clauses affected: ⊘	* 7.2, 9.3, 10
Additional Documents affected: ⊘	
Supporting Documentation: ⊘	See slides from presentation at Darmstadt SWG face-to-face meeting, and recent discussion on SWG mailing list.
Comments: ⊘	

Status: Assigned

Disposition: Reffered