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Change Request #:	29
Assigned OGC Document #:	09-169
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Document Name/Version:	*Web Services Common Standard / 1.2
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If this is a revision of a previous submission and you have a Change Request Number, then check here:

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Title:	*SOAP Exception
Source:	* http://wiki.services.eoportal.org/tiki-index.php?page=HMA-FO+OWS+Common+1.2+review
Work item code:	
Category:	* C (Functional modification of feature)

Reason for change:	* Improved Exception report within SOAP encoding
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Summary of change:	* Clause 8.7 "Exception report SOAP encoding" in OWS Common defines a fault structure for delivery of OWS exceptions. The following issues have been identified: 1. Faults should be expressible in both SOAP 1.1 and SOAP 1.2 - this is related to the topic of "SOAP Version" 2. soap:Fault/soap:Code - the code value of the SOAP fault is set to soap:Server (by the way, in SOAP 1.2 this would be soap:Receiver, no longer soap:Server - which is used in SOAP 1.1); this should not be restricted to Server alone, because some exceptions detected by the service may also be caused by the client. For example, if the service detects that the request sent by the client is invalid and therefore generates an exception, the code should indicate the client, not the server as causing the exception. In general it would be better to define which code value should be used with which OWS exception code in the SOAP binding of that OWS (if the exception code
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can clearly be assigned to one of them - otherwise, it should clearly be said that both entities may be responsible ... these occasions should be quite rare, though).

1. as a sub-issue here, the document does not say anything on possible sub-codes of a fault; these optional elements of a SOAP 1.2 fault could for example be used to contain the OWS exception code - note that the idea of using QNames as type of these exception codes is to identify the namespace where the actual (error) code value is defined, which is not impractical as code reuse and exact definition (if code semantics evolve over time) can be provided using code values together with their namespaces (note that this does not mean that a code value's namespace has to change with each new version of the standard that defines it ... a standard should rather use dictionaries which can be versioned outside the standard itself)

3. soap:Fault/soap:Detail - the document states that the ows:ExceptionReport shall be used; according to clause 8.2, the exceptions contained in such a report shall be independent errors ... it is questionable if a list of independent exceptions should be returned for the following reasons:

1. in which situations can independent errors be detected? ... certainly, it would be beneficial to tell a client as much as possible about what errors were detected but is it not rather the case that an application throws one exception as soon as it detected it?

2. how do multiple exceptions with different codes in one exception report work together with the HTTP codes as defined in section 8.6? For example, if an exception report contained two exceptions with codes OptionNotSupported and MissingParameterValue - what would the HTTP status code of the response then be

1. Table 28 states the HTTP status code "3xx, 4xx, 5xx" to be used for an exception with code NoApplicableCode - this value is not sufficiently documented. Is an implementation free to choose any of the 3xx, 4xx, 5xx codes it likes?

2. Some SOAP implementations do not support setting of the HTTP status code in faults they send - OWS Common should therefore not require (instead only recommend) to set the status code on HTTP messages that carry exceptions. "HTTP message" is used explicitly here rather than HTTP response because in a SOAP binding using WS-Addressing, the response to an operation request may actually be sent via another HTTP request asynchronously.

4. It is not fully clear whether only the ows:ExceptionReport data type can be used to encode exceptions (whether as standalone XML instance or inside a SOAP fault). The wording in the specification suggests that only ows:ExceptionReport shall be used - however, if only one exception would be contained in such a report, then it would make sense to also return an ows:Exception directly, without the surrounding ows:ExceptionReport element.

A solution for issue 3 could be:

* to require that an exception report only contains one exception (and maybe thereby also allow that an ows:Exception may be used directly - see issue 4.)

* that the exception which first triggered the 'exception report' determines the HTTP status code - and in the SOAP 1.2 binding also the fault sub-code; the meaning of "first" is defined by the service

* that an HTTP status code is assigned to exception reports which contain exceptions that would result in a conflicting HTTP status code - the SOAP fault sub-code could be omitted completely in this case or another code value be defined to express that multiple reasons exist why the fault was raised, further defined in the details element

Consequences if not approved: 

Clauses affected:

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Clause 8.7

Additional Documents affected:



Supporting Documentation:



<http://wiki.services.eoportal.org/tiki-index.php?page=HMA-FO+OWS+Common+1.2+review>

Comments:



Status:



Assigned

Disposition:



Referred