Open Letter to OGC and voting members

May 2013

We, the undersigned, have concerns that approving the "Geoservices REST API" as an OGC standard, will have detrimental impacts on interoperability within the spatial industry.

We strongly urge that the proposed "Geoservices REST API", as it stands in May 2013, be rejected as an OGC standard.

People have listed different reasons for concern. These concerns are described below.

Signed

1. Cameron Shorter, Geospatial Solutions Director at LISAsoft, core contributor & coordinator of OSGeo-Live, OSGeo Board member
2. Mark Lucas, Founding member and board of directors for OSGeo foundation, Principal Scientist for RadiantBlue Technologies Inc.
3. Stephen Woodbridge, Director of iMaptools.com, Contributor and/or PSC of Mapserver, pgRouting, PAGC, and PostGIS
4. Even Rouault, Geospatial developer, OSGeo Charter Member, core contributor and PSC member of GDAL/OGR, contributor of Mapserver, PROJ.4, libgeotiff, shapelib, libtiff
5. Gerhard Triebnig, Managing Director at EOX IT Services GmbH
6. Brent Wood, Environmental Information Delivery Programme Leader, NIWA, New Zealand. OGC member, Aust/NZ OSGEO chapter member, NZOSS Council member
7. Stephan Meissl, CTO at EOX IT Services GmbH, contributor to Mapserver, PSC chair of EOxServer
8. Jeroen Ticheler, Director of GeoCat, project founder and PSC chair of GeoNetwork opensource
9. Just van den Broecke, Director at Just Objects, contributor to Heron Mapping Client, secretary of OSGeo Dutch Local Chapter, member at OpenGeoGroep
10. Milo van der Linden, member at OpenGeoGroep
11. Landon Blake, GIS Department Manager/Land Surveyor at KSN, OSGeo California Chapter Board Representative.
12. Daniel Morissette, President at Mapgears, OSGeo Board member, core contributor and PSC member of Mapserver and GDAL/OGR. Former OGC TC member and involved in the implementation of several OGC WxS specs in MapServer.
13. Bob Basques, GIS Systems Developer at the City of Saint Paul, MN. Public Works GIS (GISmo), Technical Director at SharedGeo, OSGeo Charter Member, OSGeo TCMUG local chapter member, Co-founder and PSC member of GeoMoose project.
14. Pedro-Juan Ferrer Matoses, PM at Omnium Strategic Intelligence, Spain, OSGeo Charter Member, OSGeo Spanish Local Chapter Liaison officer.
15. Bevan Rudge, Director Lucion Limited, IT Advisor at Conservation Strategy Fund, Esri client
16. María Arias de Reyna, software engineer at GeoCat, Spain, member of OSGeo Spanish Local Chapter.
17. Anne Ghisla, OSGeo Board Member, Italy, member of OSGeo Italian Local Chapter.
18. Micho Garcia, Freelance and member of geomati.co, Spain, member of Spanish Local Chapter
19. Margherita Di Leo, OSGeo Charter Member, Post-doctoral researcher at the European Commission, JRC, Italy
20. Jorge Sanz, GIS Consultant at Prodevelop, OSGeo Charter Member, OSGeo Spanish Local Chapter Member, Spain
21. Pablo Sanxiao, CTO and co-founder at iCarto, OSGeo Spanish Local Chapter Member, Spain
22. Frank Steggink, GIS software developer at Vicrea, The Netherlands, member of the Dutch Local Chapter
23. Olivier Courtin, Oslandia co-founder, core contributor or/and PSC member of Mapserver and PostGIS. OGC TC member.
24. Wladimir Szczerban, OSGeo Spanish Local Chapter Member, Spain
25. Anita Graser, GIS specialist with AIT Austrian Institute of Technology, OSGeo Charter member and QGIS team member.
26. Volker Mische, geospatial software engineer, creator of GeoCouch
27. Iván Sánchez, OSGeo Spanish Local Chapter Member, head of OpenStreetMap Spain, OpenStreetMap Foundation member, Humanitarian OpenStreetMap Team member, Spanish SDI working group member
28. Gabriel Carrión, Strategy Manager at gvSIG association
29. Sandro Santilli, OSGeo Charter Member, PostGIS and GEOS PSC member and core hacker.

30. Javier Diaz, member of Geoinquietos Bs As [1], member of the Organizing Committee FOSS4G Bs As 2013 [2]
31. Jo Cook, Consultant at Astun Technology, former Director of OSGeo, Charter Member, founder of UK Local Chapter, Deputy Chair of FOSS4G 2013
32. Francisco José Peñarrubia, CTO and co-founder at SCOLAB. Members of gvSIG Association
33. Shanmugam Ganeshkumar, Director of GeoICON, member OSGeo Malaysia Chapter
34. Barry Rowlingson, Senior Researcher, Lancaster University and Software Sustainability Institute Fellow
35. Stefan Keller, University of Applied Sciences, Rapperswil (Switzerland), Member of Swiss OSM (SOSM) and QGIS association and of organizing committees of pgConf.DE and FOSSGIS 2013, and member of eCH (e-government standards of Switzerland)
36. Andrew Bailey, OSGeo member, Astun Technology
37. Suchith Anand, OSGeo Charter member, OSGeo Education member, FOSS4G 2013 LOC member
38. Carlos Krefft, GIS software developer at CSTARS - University of Miami, OGC and OSGeo Member.
39. Stefano Costa, OSGeo member, GFOSS.it member and former board member, Ministero per i Beni e le Attività Culturali (Italy)
40. Peter Baumann, Jacobs University, OGC member, WCS.SWG chair, editor of 10+ specs (disclaimer: this is an expression of my personal opinion and not in any way endorsed by OGC)
41. Peter Batty, CTO of Geospatial Division at Ubisense, OSGeo board member, former CTO of Intergraph and GE Smallworld, Technical Committee member of OGC in its formative years c 1995-97
42. Barend Köbben, OSGEO Chartered Member, OSGeo.nl Dutch chapter treasurer, Senior Lecturer at ITC-University of Twente
43. Paolo Cavallini, Faunalia, OSGeo member, GFOSS.it member and former president, QGIS-PSC
44. FRans Thamura, Indonesia, OSGeo Indonesia, organizer]
45. Sanghee Shin, Founder and CEO of Gaia3D, OSGeo Charter Member, Representative of OSGeo Korean Chapter, Chairman of Open Source GIS Alliance Korea
46. Benni Purwonegoro,Indonesia, IT-Spatial Engineer @ Geospatial Information Agency .
47. Jachym Cepicky, Czech Republic, member of OSGeo Board of Directors
48. Pat Cappelaere, Vightel Corporation
49. Jürgen Fischer, norBIT GmbH, QGIS core developer
50. Maria Antonia Brovelli, OSGeo Charter member, OSGeo Education member, GIS Professor and Vice Rector for the Como Campus at Politecnico di Milano, Italy
51. Nacho Varela, GIS Consultant, OSGeo Spanish Local Chapter Member, Spain
52. Vasile Craciunescu, OSGeo Charter member, OSGeo Romania Local Chapter Leader, Researcher at Romanian National Meteorological Administration, Romania
53. Abbas Abdul Wahab, Asst. Director, Federal Department of Town & Country Planning, Peninsular Malaysia
54. Roy Braam, Software Engineer @ | B3Partners
55. Peteris Bruns, Latvia, GIS Consultant & Software Engineer @ | SunGIS
56. Giovanni Manghi, Portugal, Faunalia, OSGeo member, OSGeo-Portugal
57. Hugo Martins, UK, Lutra Consulting, WebGIS Developer, OSGeo-Portugal Member
58. Saber Razmjooei, UK, Lutra Consulting, Co-Founder
59. Peter Wells, UK, Lutra Consulting, Co-Founder
60. Sidney Gijzen, The Netherlands, Researcher GIS @ Alterra, Wageningen UR
61. Miles Fidelman, US, Principal, Protocol Technologies Group, LLC
62. Puneet Kishor, OSGeo Charter Member; Geology, Univ. of Wisconsin-Madison; Creative Commons
63. António José Silva, Portugal, GIS Consultant, OSGeo-Portugal Member
64. AndreMano, Portugal, Natural History Society - GIS Department, OSGeo-Portugal Member
65. Mauricio Miranda, Argentina, OSGeo Charter Member, OSGeo Spanish Local Chapter Board Member
66. Paulo Machado, Portugal, Software Engineer @ PT Inovação
67. Alvaro Anguix, Spain, General Manager at gvSIG Association
68. Santiago Higuera, CEO at Mercatorlab, OSGeo Spanish Local Chapter Board Member, Spain

69. Alan Boudreault, Developer at Mapgears, contributor to Mapserver and GDAL/OGR.
70. Mike Saunt, UK, Owner at Astun Technology Ltd, OSGeo sponsor
71. Michael Smith, OSGeo Charter Member, Physical Scientist US Army Corps of Engineers Remote Sensing GIS Center
72. Angelos Tzotsos, OSGeo Charter Member, Researcher at National Technical University of Athens
73. Michaël Douchin, France, GIS consultant & software engineer at 3liz
74. Pedro Venâncio, Portugal, GIS Analyst @ Municipality of Pinhel
75. Jorge Gustavo Rocha, Portugal, GIS Professor at Universidade do Minho
76. Daniel Kastl, Japan, Georepublic, Founder
77. John Callahan, US, Research Scientist and GIS/Remote Sensing Specialist, University of Delaware
78. Kalyan Janakiraman, Senior Systems Analyst, Business Development Services, NSW Land and Property Information, Sydney, Australia
79. Phillip Davis, Director, National Geospatial Technology Center of Excellence, Texas, USA
80. Simon Pigot, contributor to and PSC member of GeoNetwork opensource (speaking for myself, not an official view of my employer)
81. John Bryant, Consultant, Mammoth Mapping, Dawson City, Canada and GIS/DB Admin, Jupiter Mines, Perth, Australia
82. Christos Iossifides, Remote Sensing Instructor, Laboratory Teaching Staff, Remote Sensing Instructor and Researcher, National Technical University of Athens
83. Tim Bowden, Spatial Consultant, Perth, Australia
84. Luca Delucchi, GIS Technician, Trento, Italy
85. Bart van den Eijnden, GIS software developer, Utrecht, Netherlands
86. Henry Addo, Software Developer at Ushahidi [3], contributor of OSGeo-Live
87. Stefano Iacovella, GIS consultant & software engineer, Rome, Italy
88. Meine Toonen, Software Engineer @ B3Partners, The Netherlands
89. Arne Kepp, Software Engineer, Oslo, Norway
90. Pirmin Kalberer, Managing director Sourcepole, FOSSGIS member, Contributor of GDAL/OGR, QGIS, Mapfish, UbuntuGIS, OSGeo-Live, Switzerland
91. Dr. Horst Düster, Managing director Sourcepole, FOSSGIS member, Treasurer QGIS Project QGIS, Zürich, Switzerland
92. Richard Duivenvoorde, Managing director & software developer Webmapper, QGIS community member
93. Steven Feldman, Principal at KnowWhere Consulting and Chair of the LOC for FOSS4G 2013
94. Edward Mac Gillavry, Managing director & software developer Webmapper
95. Maxim Dubinin, CEO at NextGIS, head of GIS-Lab.info
96. Fran Boon, PMC Chair at Sahana Foundation, CTO of AidIQ
97. Ian Edwards, Chair OSGeo:UK
98. Dmitriy Baryshnikov Developer at NextGIS, GDAL/OGR committer, wxGIS developer, GIS-Lab.info community member
99. Chris van Lith, Director B3Partners, member of OpenGeoGroep
100. Vincent Picavet, co-founder of Oslandia, founding member and treasurer of OSGeo-FR
101. Stefan A. Tzeggai, creator of AtlasStyler SLD editor, founder of empirica systeme gmbh
102. Roald de Wit, Geospatial Software Engineer, Melbourne, Australia
103. Manuel Grizonnet, working at the French Space Agency, ORFEO ToolBox library developer
104. Toru Mori, President & CEO, Orkney, Inc., Yokohama, Japan, Representative of OSGeo Japan Chapter, OSGeo Charter Member
105. Markus Schneider, TMC chair of the deegree project, CEO of Occam Labs
106. Elena Mezzini, Remote Sensing and GIS Technician, GFOSS.it member, Bologna, Italy
107. Alexander Bruy, NextGIS, QGIS core developer
108. Danilo Furtado, Portugal, OSGeo member, OSGeo-Portugal
109. Andreas Schmitz, Germany, deegree core developer and TMC member, CTO of Occam Labs
110. Oliver Tonnhofer, Germany, MapProxy core developer, founder & CTO of Omniscale

111. Thomas Baschetti, Germany, Freelancer, Mapbender PSC Member, FOSSGIS member

112. Ian Mayo, GeoSpatial developer, UK

113. Ivan Mincik, CEO of GISTA s.r.o., Slovakia

114. Edmar Moretti, Software developer, i3GEO core developer, Brazil

115. Diego Moreira, GIS Analyst, Contributor of QGIS, Brazil

116. Luigi Pirelli, Freelance Analyst/Programmer, co-founder of Italian OSGEO Local Chapter GFOSS.it, Italy

117. Kyle Shannon Software Developer, contributor of GDAL/OGR, United States

118. David Mateos, worker member at Terrativa S. Coop. and OSGeo Spanish Local Chapter Member, Spain

119. Luis Franco, researcher and GIS analyst at the University of Santiago de Compostela, Spain

120. Gabriel Roldan, Software Developer, Argentina, OSGeo Charter Member, OSGeo Spanish Local Chapter Member

121. Dimitris Kotzinos, OSGEO Charter Member, OSGEO Greek Chapter founder, Assistant Professor TEI of Serres, Greece

122. Stefan Steiniger, owner of GEO Steiniger Ltda., contributor to OpenJUMP GIS and OpenTripPlanner and author of several FOSS4G overview articles, Canada/Chile

123. Nobusuke Iwasaki, Senior Researcher, National Institute for Agro-Environmental Sciences, Tsukuba, Japan, OSGeo Japan Chapter Board Member

124. Ross Johnson, Land Information Officer, City of Ryde Council and NSW Committee member of Surveying & Spatial Sciences Institute (SSSI)

125. Kumaran Narayanaswamy, CEO & Managing Director of kCube Consultancy Services Pvt Ltd India.[4], Member of India OSGeo Chapter.

126. Luis Fernando Bueno, Professor at Federal University of Rondonia, researcher and GIS analyst, Brazil.

127. Bob Bruce, FEC, P.Eng., Geomatics Engineer, Winnipeg, Manitoba, Canada.

128. Moritz Lennert, Researcher in geography at the Free University of Brussels (ULB), GRASS-PSC

129. Ian Turton, Software developer and open standards advocate, GeoTools-PSC

130. Gérald Fenoy, OSGeo Charter member, Founder and CEO of GeoLabs SARL, France

131. David Bitner, OSGeo Charter member, OSGeo VP for Geodata, OSGeo Twin Cities Chapter, Sahana Software Foundation Board of Directors, MetroGIS Coordinating Committee Chair, owner dbSpatial

132. Peter Löwe, OSGeo Charter member, Senior Researcher at Deutsches GeoForschungsZentrum GFZ, General Manager GISIX.com

133. Gavin Fleming, OSGeo Charter member, owner of AfriSpatial.

134. Frank Maes, GeoICT professional, Head Operations at Geosparc, Contributor & community member of Geomajas, OSGeo member

Summary

The OGC candidate standard titled "GeoServices REST API" is currently, in May 2013, being considered to be approved as an Open Geospatial Consortium (OGC) standard. The vote to accept the document as a standard is unusually contentious. The controversy is the cause of this open letter.

The candidate standard was previously released for public comment and can be found on the request for public comment page (though public comment has been closed for now).

The candidate standard attempts to standardize a suite of web services such as a service which provides map images, a service which provides geospatial feature data, and a service which performs geospatial processing. The candidate standard focuses on interactions via a defined hierarchy of URLs and using predominantly a particular set of JSON schemas for the exchange of geospatial data.

Criticism and Response

The **criticism** of the adoption of this particular document as an OGC Standard includes a wide variety of reasons such as:

•the OGC's process through which the document was developed which is thought to lack sufficient flexibility to respond to input from various stakeholders,

•the focus of the document on 'REST' and 'API' which is seen as not matching the ideas others have for these concepts,
•the names of the standard and of the services which are seen as potentially confusing,
•the functionality of the new services which are considered to duplicate that of existing services already standardized by the OGC such as WMS, WFS, WCS, and WPS,
•the addition of a new set of services based on new URL patterns and new JSON exchange formats which is seen as duplicating the efforts of other working groups bringing similar ideas to the updates of existing OGC services,
•the re-introduction in the new services of previously resolved interoperability issues which is seen as failing to build on the existing knowledge and experience,
•the use of the particular JSON schemas which are seen as having little industry acceptance and are incompatible with other widely used schemas, and
•the lack of implementation diversity which is thought to give the vendor of the one complete implementation an unusual commercial advantage on top of the vendor's already dominant position in the domain.
These issues have potential impacts on the use of 'Open Standards' by governments and companies, on the interoperability of software interacting with standards compliant OGC services, on the costs to developers and users of standards compliant software, on the understanding of 'Open Standards' by the public at large, and, possibly, on the reputation of the OGC as a champion of interoperability.

In particular there are concerns by some that adoption of the standard will likely result in a combination of the following:

1.The cost to application developers, systems integrators, testers and sponsors to support all relevant OGC standards will be substantially increased.
2.Consequently, organisations and/or applications may choose to only support one standard, or only support one standard fully.
3.Sponsors (such as governments) who require compliance with OGC standards will discover that applications don't communicate together, due to applications supporting different OGC standards that essentially do the same thing.
4.This will result in a diminished importance of OGC, as the "OGC standards" stamp of approval will not equate interoperability.
5.After a while, in order to solve interoperability issues, a respected international organisation or program will likely take the initiative to mandate one standard as the preferred standard for all agencies to follow. To date, the OGC has provided this leadership.
6.One standard taking prominence over the other will likely lead to the other being neglected or deprecated, resulting in many OGC compliant systems becoming legacy systems in the process. This should be considered an undesirable outcome for a standards organisation.
In **response** to these issues, the authors of the Geoservices REST API document have stated that:

•the process of the OGC has been followed completely,
•the specification actually is RESTful and does define an API,
•the name, due to the controversy, is open for modification
•the OGC does not forbid duplication of service functionality, already has duplication between the W*S and the S*S (sensor) family of standards, should not block progress in the name of 'one true way', and harmonization between the services can be considered in the future,
•the JSON format exists and functions, and
•there are alternative implementations for some of these services.
The authors also stress that the existence of a large user base shows the service is useful, and that the standardization of the services at the OGC may encourage new implementations.

The SWG has published two documents in response to various comments.

•File:OGC 12-642 GeoServices REST API - RFC Comments Response.pdf presents the responses from the Standards Working Group to the comments received from the public during the public Request for Comments (RFC).
•File:OGC 13-031r1 GeoServices REST API - Response to no votes r1.pdf presents the responses from the Standards Working Group to the reasons given by the organizations voting _no_ during the adoption vote.

Positions on the vote
The discussion raises a number of issues, many based upon complex technical concepts and implications. This makes it difficult for voting OGC members considering whether to support (or not) the "Geoservices REST API" as a standard. The following provides one analysis of the positions on the vote, aimed to simplify and summarize key points. However, it does not necessarily represent the

opinions held by all signatories above.

The pros for accepting the "Geoservices REST API" document as an OGC standard

- The OGC should be in the business of developing good standards, not in choosing which standards should be implemented.
- The proposers of the document want to make a standard and have followed all the rules of the OGC. The work of any such group of members deserves serious, good faith consideration.
- The need for an integrated suite of services using simple data, which is addressed (partially) by the document, is real. The proposed document is pushing the OGC on this issue.
- The proposed document could be useful to a number of people.
- The proposed document is not significantly more broken than the existing standards of the OGC. As one author of standards notes:
  "I know how totally impossible it is to write a good standard, so the weaknesses in the existing document seem more acceptable."

The cons

- The OGC actually is, whether it should be or not, in the position of recommending interoperable standards for geospatial services. The proposed document is not good enough, has implementations dominated by one vendor's server implementation, and not publicly supported enough, to be considered at the same level as existing standards.
- Adopting a standard implies a desire to maintain the standard, but OGC's desire to support this approach has been questioned by some. In particular, the lack of collaboration and willingness to accept recommendations from the community on this version of the "Geoservices REST API" document bodes ill for the future.
- The overlap in functionality between the proposed services and the existing services, notably with the ongoing work to modularize the existing services, is almost 100 percent. However, compatibility is low.
- There is already a published document: http://www.esri.com/library/whitepapers/pdfs/geoservices-rest-spec.pdf so there is no need for the document to be adopted as an OGC Standard merely for interoperability with the ESRI implementation.
- The document, as a new, separate effort, repeats mistakes which were made and since solved by the other services.
- The document focuses on the past (notably with backwards compatibility and use of only GET/POST) not on the future.
- The document needs a comprehensive editorial review and substantial rewriting for clarity.

A conclusion

Both simple answers are bad.

A simple acceptance of the standard would introduce a new set of 'OGC approved' open services. The OGC approval might enable governments to buy a XXXX-new-name-here-XXXX solution instead of a W*S or a S*S solution. The path forwards towards harmonizing the services is unclear. Fixing this document in addition to fixing the W*S services will be a pain.

Simply rejecting the solution would be bad for the OGC. It would place the OGC in the position of picking winners and losers in the standards business. It would mean that the OGC is stuck on the project of fixing the W*S standards to meet some nebulous future functionality without having any path to get there. It would discourage innovation and progress.

Is there any third way?

Well, actually, there is a different way of thinking of the issue. Overall, there appears to be a shared desire for an integrated suite of geospatial services, originally focused on a simple data model, built on the exchange of well defined resources in simple formats including JSON, accessible and usable using the core HTTP verbs, and discoverable through following HTML links and patterns of URL paths. The hope is that such a suite can be designed based on the best expertise of the OGC, can be widely supported by the community, and can be implemented and tested by multiple groups. Neither the proposed document, nor the current services meet this

vision. So the work, ultimately, is on improving all the services at the OGC, first to modularize them, then to enable simple implementations, and finally to link those implementations into a functional suite. Since this is the work that is already happening, perhaps the vote is an unfortunate distraction and the productive way forward is merely to redouble the efforts to create the next versions of the standards.

Issues with the document

Beyond the controversy described above, there are issues with the Geoservices REST API document itself. Even if the standard deserves support, these issues could be considered blockers to the adoption of the current, May 2013, document.

The critique is incomplete because it quickly falls into a full editorial review of the text, something which takes a lot of time and effort and is beyond the scope and intent of this Open Letter.

The critique can be found at: http://wiki.osgeo.org/wiki/Geoservices_REST_API_critique.

Note that some of these critiques hold the document to OGC's current, standards writing guidelines. The OGC has been striving to develop better standards so new standards must meet higher requirements than past standards. The lack of clarity in the proposed document is not substantially worse than many published standards but ought to be resolved in new standards.

Further Concerns

Technical Concerns

• see this discussion for detailed arguments why OGC WCS is superior to the "GeoServices REST API" Part 6. It concludes:

In summary, the ESRI "Geoservice REST API" Imaging part is at a technological level where WCS departed from some 5 years ago. Inconciseness of the specification at large will make it difficult for third parties to come up with interoperable implementations. The components making up the ESRI "Geoservice REST API" provide natural blocks assignable to the matching SWGs. As for Part 6 of the ESRI "Geoservice REST API", if to become a standard it needs to be discussed in the WCS.SWG for harmonization, clarification, and improvement.

Methodological Concerns

• The Geoservices REST API can not be amended (other than editorial changes in the specification document), because of a requirement for backward compatibility with the ESRI implementation. This has limited improvements in this version of the candidate specification.

Further Reading

Please add links to referenced documents, related news stories or blog posts here.

• Call for comments on GeoServices REST API: http://www.opengeospatial.org/standards/requests/89

• Responses from the Standards Working Group to the comments received from the public during the public Request for Comments (RFC): File:OGC 12-642 GeoServices REST API - RFC Comments Response.pdf

• Responses from the Standards Working Group to the reasons given by the organizations voting _no_ during the adoption vote: File:OGC 13-031r1 GeoServices REST API - Response to no votes r1.pdf

• Email archive of OSGeo discussions about GeoServices REST API: http://lists.osgeo.org/pipermail/discuss/2013-May/thread.html

• Adrian Custer's summary of technical issues (and original source of some content in this letter): http://lists.osgeo.org/pipermail/discuss/2013-May/011667.html

• "Is OGC Loosing its way?", letter to OGC Voters, from OGC Interoperability Movement Team Leaders, http://lists.osgeo.org/pipermail/discuss/2013-May/011632.html