



Nominations for Officers and Executive Committee Members
30th CODATA General Assembly, Denver, CO., USA,
11 September 2016

Nomination Form for the Election of Officers and Executive Committee
30th CODATA General Assembly, Denver, CO., USA, 11 September 2014

Nomination Submitted by	<i>Horst Kremers</i>
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Representing	<i>CODATA-Germany</i>
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Name of Candidate	<i>Prof. Dr. Peter Baumann</i>
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Affiliation	<i>Jacobs University</i>
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Nationality	German
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Nominated for	<i>Please Tick</i>
Secretary-General	
Treasurer	
Ordinary Member Executive Committee	X

Scientific Discipline(s)	Computer Science, Data Science
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Previous positions held in CODATA	Dates
General Secretary, CODATA-Germany	2003 -

Short statement of interest in the role.

Participation of Peter Baumann as a CODATA Executive Committee member would tap into this body of experience, and would leverage synergies between different bodies by fostering harmonization and exchange.

- With his standardization work, he is strongly promoting data principles, policies, and practice internationally. Through an active interchange with the manifold communities mingling in CODATA he can more actively take up their requirements so that the standards produced reflect the real community needs in science and engineering.
- With his Array Database research he is advancing the frontiers of data science. In organizations like RDA and EUDAT he is promoting modern data management principles into Earth, Space, and Life sciences. This cross-fertilization can be amplified in an Executive Committee position.
- He is actively mobilizing data capacity with the open-source tools he is contributing to the community.
- Based on his specialization in scientific data services he can serve to educate communities about the best use of today's manifold technologies available. Again, an Executive Committee position can multiply the effect and impact of his work.
- His current role in bridging organizations can be leveraged advantageously for CODATA work. Currently busy in CODATA Germany, RDA, OGC, ISO, W3C, EarthServer, and INSPIRE Peter Baumann can extend this bridging work into EarthCube, Future Earth, GEOSS, UN ISDR, and more. This can help leveraging synergies, avoid reinvention of wheels, and achieve compatibility of community standards.

Since many years, Peter Baumann is doing research on what is called "Big Data" today. With his seminal work on "datacubes" (i.e., large, multi-dimensional arrays) he has pioneered new research combining databases, programming languages, supercomputing, and modern hardware and has contributed technology used for unleashing the potential of data at large-scale institutions like European Space Agency and ECMWF, which hosts the world's largest meteorological data archive.

His research and development work is situated at the border line between academia and industry, with activities in both domains; actually, his work is distinguished from that of many other researchers by his proactive crossing of domain borders, bringing together experts from computer science, data science, natural sciences, and engineering for a fruitful dialog on the use and evolution of digital tools for a better understanding of our world. Still, he has published more than 100 scientific papers in the field.

By combining theoretical foundations and practical experience he was able to contribute "datacube" standards in critical domains: extending ISO SQL with arrays, often dubbed "Science SQL", as well as data and service models for massive spatio-temporal geo datacubes, such as satellite image timeseries and meteorological simulation output. His OGC geo "datacube" standards have received extraordinary take-up by other standardization bodies (like ISO and INSPIRE), open-source projects (such as OpenLayers, QGIS, NASA WorldWind) and commercial vendors (such as ESRI) alike.

Therefore, in my position as chairman of the board of CODATA Germany I strongly support election of Peter Baumann as Executive Committee member.

CV of Peter Baumann

Dr. Peter Baumann is leading the [Large-Scale Scientific Information Systems research group](#) at Jacobs University which innovates on Big Data, specifically: flexible, scalable services for massive multi-dimensional arrays ("grids", "rasters") and their application in science and engineering, such as spatio-temporal sensor, image, simulation, and statistics data. With his work on algebra, query languages, and efficient architectures he has coined the research field of Array Databases and is Principal Architect of the worldwide first complete and operational Array DBMS, [rasdaman](#). The rasdaman system is in operational use on 130+ TB geo databases internationally and commercialized successfully by a dedicated spin-off, [rasdaman GmbH](#), founded and led by him.

Peter Baumann has authored and co-authored 110+ book chapters and papers on raster databases and related fields, and holds international patents on array databases. In recognition of his innovator work he has received a series of national and international innovation awards. In 2014, rasdaman has been ranked winner of the Big Data Challenge posed by T-Systems as part of the Copernicus Master competition.

Peter Baumann is active, often leading contributor to standardization in the Open Geospatial Consortium (OGC) and ISO bodies, being editor of a series of adopted international standards. In OGC he is chairing "Big Geo Data" working groups and is editor of 12 adopted standards, among them the WCS suite. In ISO, he is working on the forthcoming SQL / MDA standard which extends SQL with n-D arrays, and on modernizing the ISO Big Geo Data standards. In the Research Data Alliance (RDA), he co-chairs the Big Data and Geospatial Interest Groups. In 2014, OGC has honored his contribution to Big Data standardization with the prestigious Kenneth Gardels Award.

Summary of committee and standardization bodies served:

- [Open Geospatial Consortium](#) (since 2002):
 - editor, OGC "Big Geo Data" standards suite (more than 10 specifications currently)
 - member, [OGC Architectural Board](#) (OAB)
 - chair, [Big Data Working Group](#), [Coverages Working Group](#), Web Coverage Service Standards Working Group
 - founder, [Temporal Domain Working Group](#)
- ISO:
 - German delegate, ISO/IEC JTC1 / [SC32](#) / WG3 SQL
 - member, ISO/IEC JTC 1 / [WG9 Big Data](#)
 - member, [TC211](#) / WG6 Geographic information/Geomatics – Imagery (OGC liaison)
- RDA:
 - chair, [Big Data Interest Group](#)
 - chair, [Geospatial Interest Group](#)
 - chair, [Array Database Working Group](#)
- German delegate, [INSPIRE](#) MIG-T
- co-chair, [Earth Science Informatics Technical Committee](#), IEEE Geoscience and Remote Sensing Society (IGARSS)
- member, [ERCIM Expert Group Big Data](#)
- German delegate, [Belmont Forum](#) WP 3 Harmonization of global data infrastructure for sharing environmental data
- [Charter Member](#), [Open-Source Geospatial Foundation](#) (OSGeo)
- member, W3C Spatial Data on the Web Working Group
- founding member and secretary, CODATA Germany
- member, advisory board, GDI-HB (geo data infrastructure of the State of Bremen)

See www.peter-baumann.org for more information.