

VAMDC bridging the gap between A&M data producers, users and editor

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VAMDC CONSORTIUM

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The "Virtual Atomic and Molecular Data Centre Consortium" (VAMDC Consortium, <http://www.vamdc.eu>) [1] is a worldwide consortium which federates Atomic and Molecular databases through an e-science infrastructure and an organisation to support this activity (<http://www.vamdc.org/structure/how-to-join-us/>). About 90% of the inter-connected databases handle data that are used for the interpretation of astronomical spectra and for the modeling in media of many fields of astrophysics. The VAMDC Consortium has connected databases from the radiation damage and the plasma communities.

The current VAMDC e-infrastructure interconnects about 36 atomic and molecular databases that cover atomic and molecular spectroscopy and processes. VAMDC offers a common entry point to all incorporated databases through the VAMDC portal (<http://portal.vamdc.eu>) and VAMDC develops also standalone tools in order to retrieve and handle the data. VAMDC provides software and support in order to include new databases within the VAMDC e-infrastructure. One current feature of VAMDC e-infrastructure is the constrained environment for the description of data, in particular the XSAMS schema [2] and other standardized protocols (<http://www.vamdc.eu/standards>) that ensure a higher quality for the distribution of data. The talk will present the VAMDC Consortium, the VAMDC e-infrastructure with the current status of its underlying technology, its services, current work being carried out in order to improve the infrastructure as well as discussions towards a synergy between VAMDC and IVOA. VAMDC is opened to new collaborations in order to support creation of tools for the users community. Recently VAMDC, commissioned by the Research Data Alliance (<https://www.rd-alliance.org/groups/data-citation-wg.html>), has implemented the recommendations of the RDA data citation group. Within this context a first work has been done on provenance of datasets [3] which impacts the XSAMS schema, and a second work, for which RDA provided funding to VAMDC Consortium, has implemented the concept of Query Store [4].

The talk will briefly present the VAMDC Consortium, the VAMDC e-infrastructure with the current status of its underlying technology, its services, the new feature of Query Store related to data citation and will underline how usage of VAMDC will increase the impact factor of A&M producers [5] and will offer a more reliable citation of A&M datasets included in application fields.

Keywords: *Databases, Atoms, Molecules*

References

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