The Virtual Solar-Terrestrial Observatory: A Deployed Semantic Web Application Case Study for Scientific Research

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The Virtual Solar-Terrestrial Observatory is a production semantic web data framework providing access to observational datasets from fields spanning upper atmospheric terrestrial physics to solar physics. The observatory allows virtual access to a highly distributed and heterogeneous set of data that appears as if all resources are organized, stored and retrieved/used in a common way. The end-user community comprises scientists, students, data providers numbering over 600 out of an estimated community of 800. We present details on the case study, our technological approach including the semantic web languages, tools and infrastructure deployed, benefits of AI technology to the application, and our present evaluation after the initial nine months of use.

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