



Jun 27th, 9:00 AM - 10:20 AM

Progress and Challenges Supporting Environmental Models and Data Deployed as Integrated Services for Small to Large User Communities

Jack R. Carlson

Colorado State University - Fort Collins, jack.carlson@colostate.edu

Olaf David

Colorado State University - Fort Collins, olaf.david@colostate.edu

Ken W. Rojas

USDA Natural Resources Conservation Service, ken.rojas@ftc.usda.gov

Paul Hishmeh

Field to Market - The Alliance for Sustainable Agriculture, phishmeh@fieldtomarket.org

Follow this and additional works at: <https://scholarsarchive.byu.edu/iemssconference>

Carlson, Jack R.; David, Olaf; Rojas, Ken W.; and Hishmeh, Paul, "Progress and Challenges Supporting Environmental Models and Data Deployed as Integrated Services for Small to Large User Communities" (2018). *International Congress on Environmental Modelling and Software*. 1.
<https://scholarsarchive.byu.edu/iemssconference/2018/Stream-A/1>

This Oral Presentation (in session) is brought to you for free and open access by the Civil and Environmental Engineering at BYU ScholarsArchive. It has been accepted for inclusion in International Congress on Environmental Modelling and Software by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.



Progress and Challenges Supporting Environmental Models and Data Deployed as Integrated Services for Small to Large User Communities

Jack R. Carlson¹, Olaf David¹, Ken Rojas², and Paul Hishmeh³

¹Object Modelling System Laboratory, One Water Solutions Institute, Department of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado; ²USDA-Natural Resources Conservation Service, Information Technology Center, Fort Collins, Colorado; ³Field to Market – The Alliance for Sustainable Agriculture, Washington, DC, USA
(jack.carlson@colostate.edu)

Abstract: During the past two decades, the Object Modeling System (OMS) framework evolved from a tool for building, testing, and validating environmental models in a consistent, non-invasive manner as an assembly of science components to include the Cloud Services Integration Platform (CSIP) for their deployment and integration as web services with business systems of public and private organizations, as well as university research programs. Currently OMS/CSIP repositories contain 292 web services organized in 31 service layers for (1) hydrology and water resources management, (2) erosion and sediment transport, (3) conservation resource management, (4) data access, retrieval, and management, (5) geospatial and statistical analysis, and (6) research support. These services and supporting data stores have been deployed and integrated with research, pilot, and production systems and applications of several organizations. We currently provide tier 1, 2, or 3 support to ~2 million service requests annually through the OMS/CSIP lifecycle: development, testing, validation, release, deployment, and production. Working with many organizations having unique requirements presents several challenges to meeting desired levels of customer satisfaction, forcing an emphasis on process improvement and operational efficiency. Using our experience supporting Field to Market – The Alliance for Sustainable Agriculture, the USDA Conservation Delivery Streamlining Initiative (CDSI), and other user communities, we analyze and describe steps taken to meet customer expectations, including release management, continuous integration, capacity management and hosting, access control, privacy protection, system/business activity monitoring, archiving, data stewardship, and documentation.

Keywords: Object Modeling System (OMS), model services, deployment and support