

The USDA Collaborative Software Development Laboratory (CoLab) Provides A Flexible System for Facilitating Inter-agency Project Development

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Abstract: The US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) has set up and is hosting a Collaborative Software Development Laboratory (Colab) for the purpose of facilitating inter and intra-agency software development (<http://colab.usda.gov>). Colab is a scalable web application of the commercial collaboration platform CodeBeamer and the open source version control system Subversion. Colab enables a geographic-disperse software development community to; 1) be organized around specific projects, 2) have identified roles and responsibilities, 3) communicate progress and concerns, 4) identify and track the progress of defined activities, 5) assign activities to project members, 6) manage project documents, 7) manage and version software source code and, 8) automate software builds and tests. Colab is ideal for software development projects because of its integrated version control and its automation capabilities but is generally applicable to any type project. Colab is versatile and can be customized to meet the unique requirements of each project. There are currently around 240 projects in Colab and 450 individual participants including USDA NRCS, US Agricultural Research Service (ARS), US Geological Survey (USGS), US Army Corp of Engineers (USACE), National Oceanic & Atmospheric Administration (NOAA), the Environmental Protection Agency (EPA), US Department of Energy (DOE), Universities, private consultants and international collaborators. Examples of the types of projects include; 1) inter-agency coordination projects such as the MOU on Multimedia Environmental Modeling, 2) modeling framework development such as the Object Modeling System (OMS) and FRAMES 3MRA, 3) modeling projects such as the ARS Wind and Water Erosion Model, 4) action agency software products such as the NRCS Customer Service Toolkit and the Engineering Field Tools, 5) NRCS web applications for time and accounting and progress reporting, 6) general use web applications such as the NRCS Web Soil Survey, 7) database systems such as the NRCS National Soil Information System (NASIS), 8) development of a water supply and forecasting system based on the Object Modeling System and the Precipitation Runoff Modeling System.