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An automated benchmarking infrastructure to support operational delivery of a satellite-based evapotranspiration product for Australia (the ET-ICE project)

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Infrastructure was developed to allow satellite-based evapotransipration products to be compared and evaluated against independent observations at different temporal and spatial scales. The infrastructure is based on data representation standards that enable highly automated operation and is being used in the Evapotranspiration product Inter-Comparison and Evaluation (ET-ICE) project. The project has assembled operational or near-operational gridded ET products for Australia and evaluates these for their suitability as part of an operational ET product to be delivered for the whole continent by the Australian Bureau of Meteorology Water Division. To meet the specifications for the operational product, minimum requirements are monthly time step, 5km resolution, full coverage over Australia for the period 2000-2005, and potential to support an operational data service. Currently seven ET products (some with multiple variants) are being assessed, including products based on remotely sensed land surface temperature, satellite reflectance measurements, the MODIS Leaf Area Index product, or simulated by land surface models. The flexibility of the infrastructure means that new (or revised) products and validation data are easily added. The infrastructure enables objective benchmarking and improvement of operational products, and could be easily adapted for other spatio-temporal satellite products.