U.S. Department of Energy
Office of Civilian Radioactive Waste Management

TSPA-SR Model Implementation

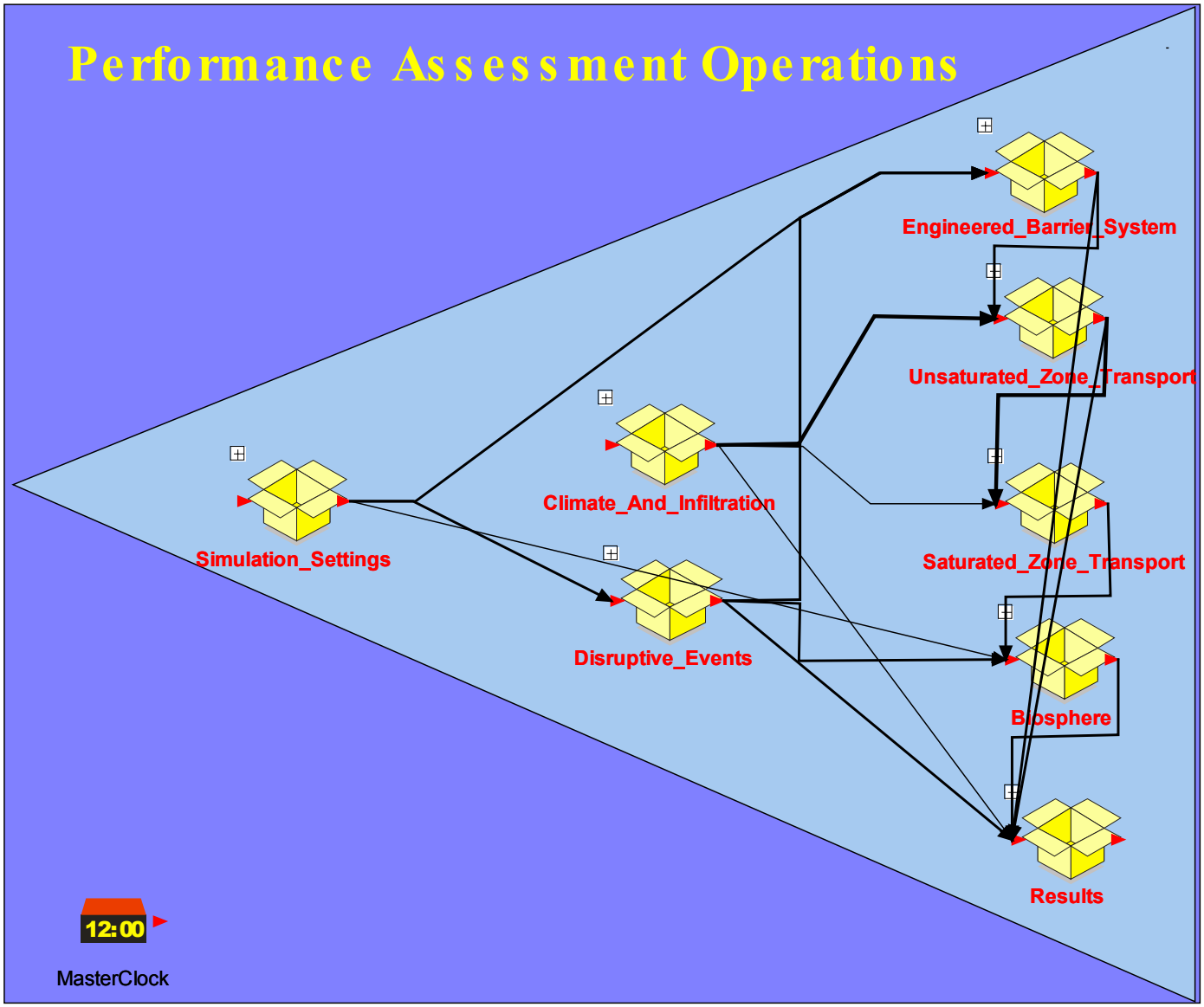
Presented to:
NRC/DOE Technical Exchange on Total System Performance Assessment (TSPA) for Yucca Mountain
San Antonio, Texas

Presented by:
S. David Sevougian
Performance Assessment Department
CRWMS M&O

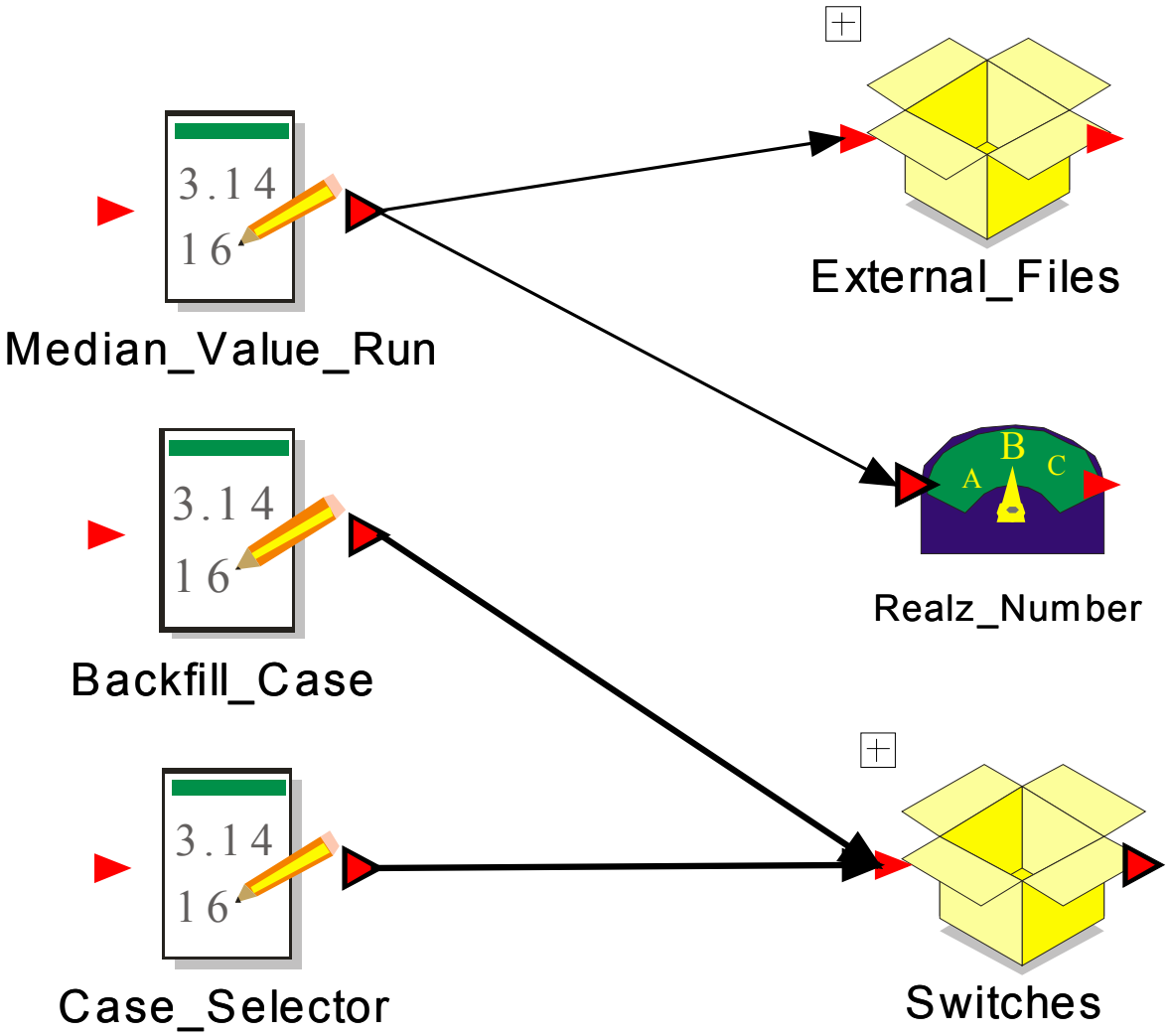
June 7, 2000

YUCCA MOUNTAIN PROJECT

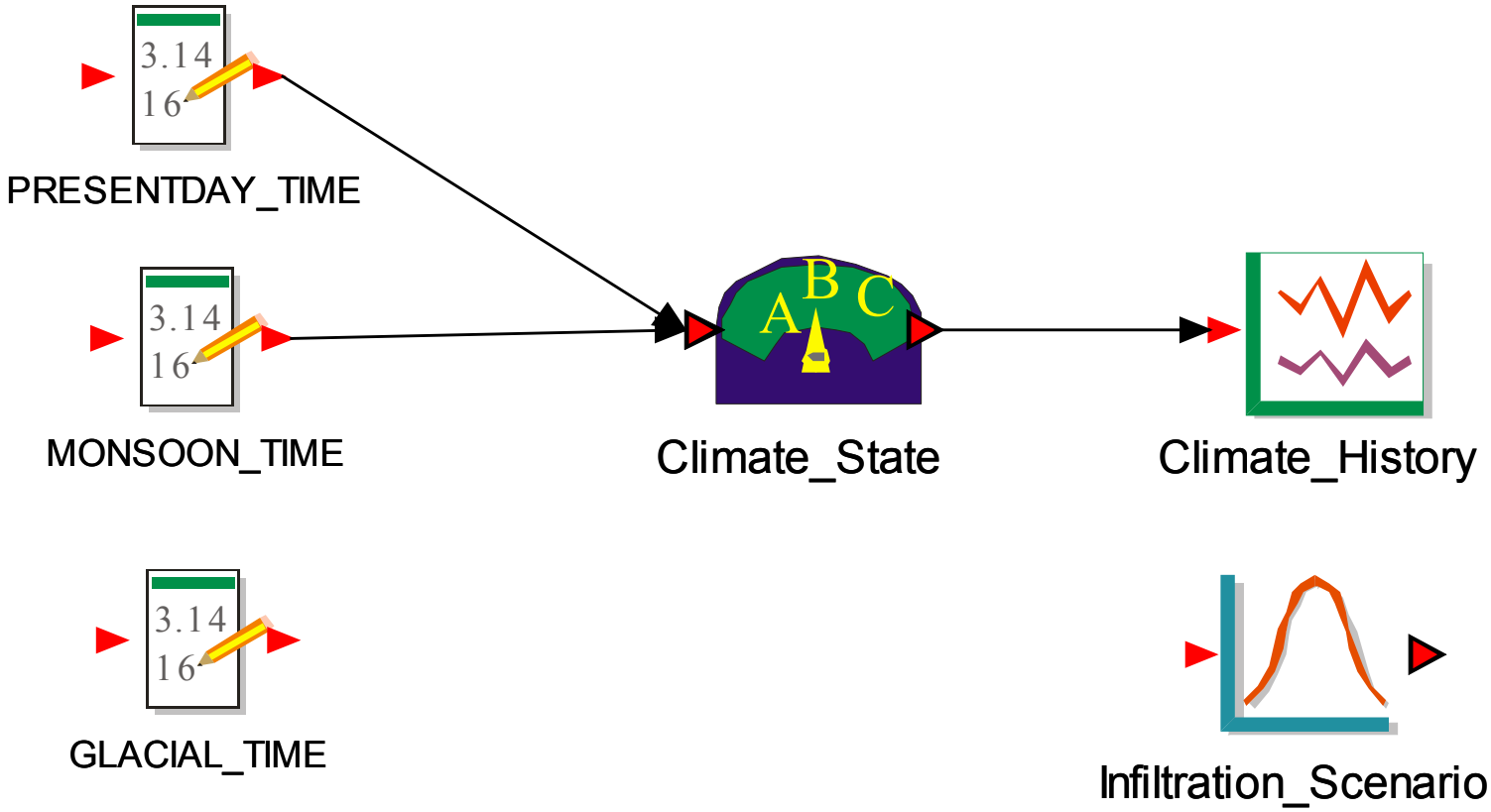
TSPA Model for Site Recommendation



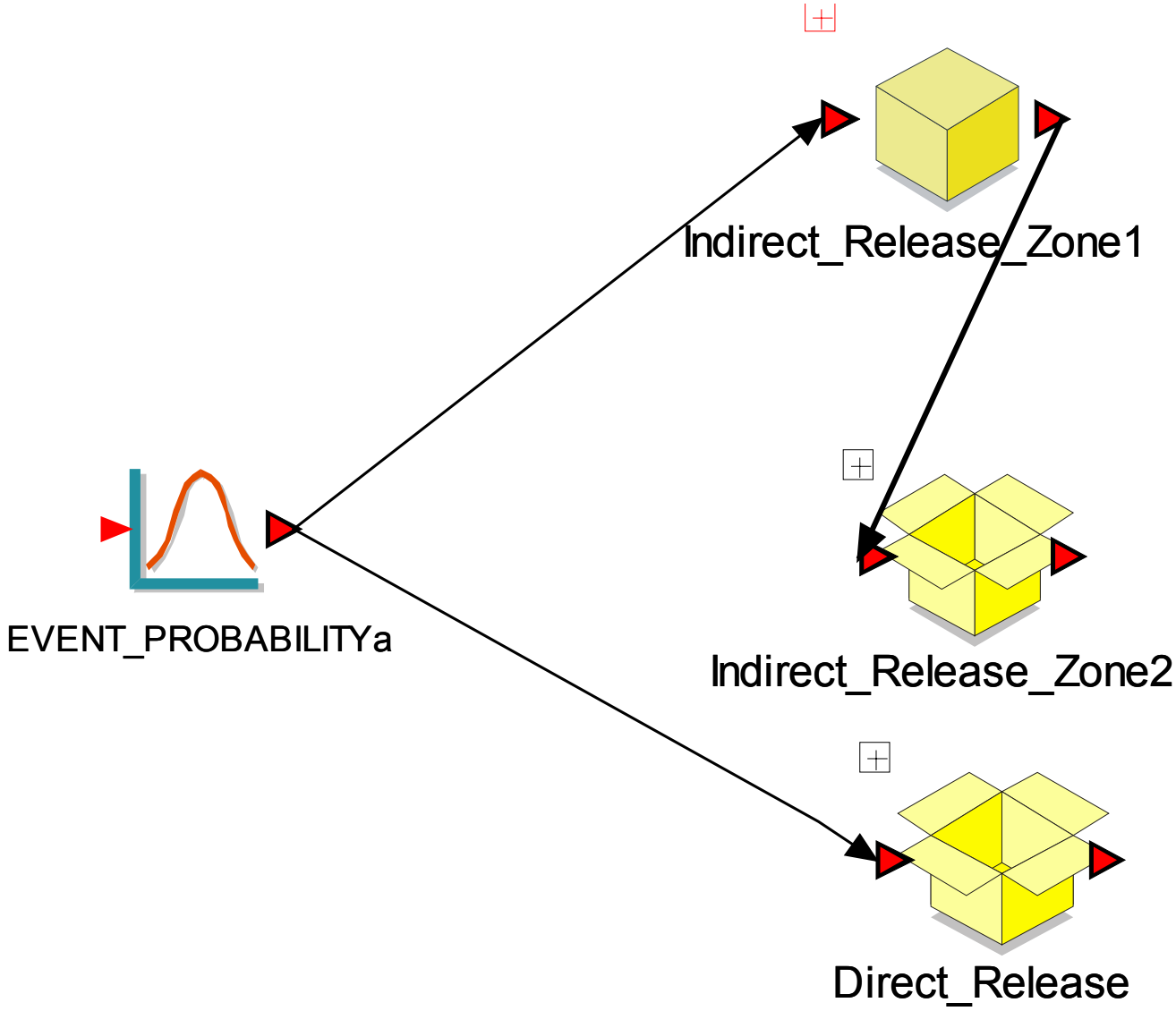
Simulation Settings Submodel



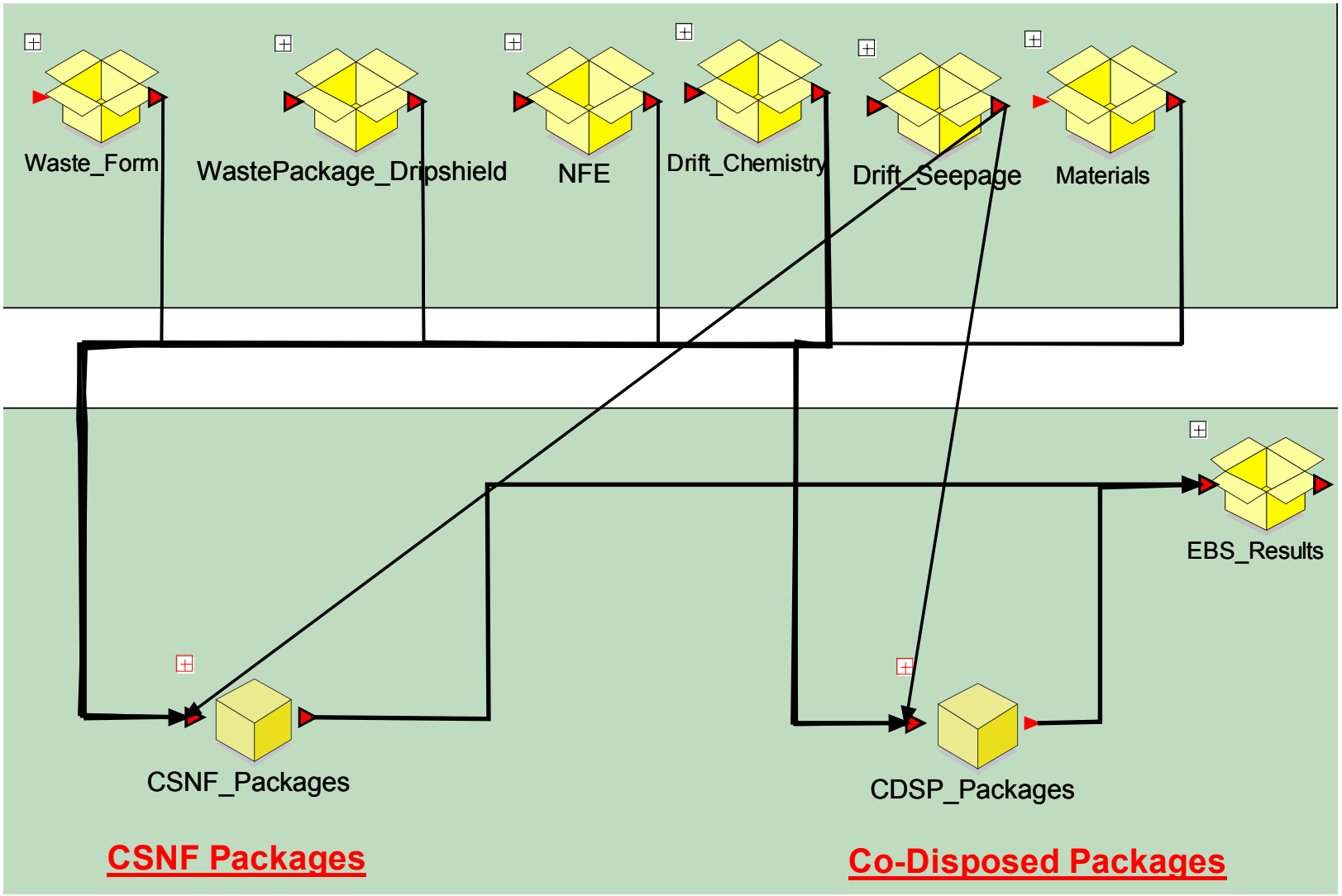
Climate and Infiltration Submodel



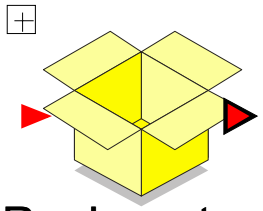
Disruptive Events Submodel



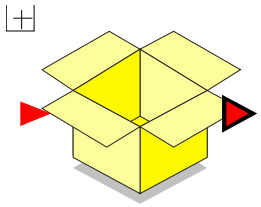
Engineered Barrier System Submodel



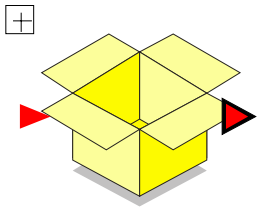
Waste Form Component of the EBS Submodel



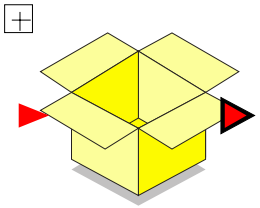
Rn_Inventory



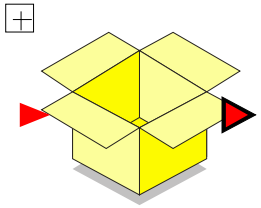
In_Package_Chemistry



Solubilities



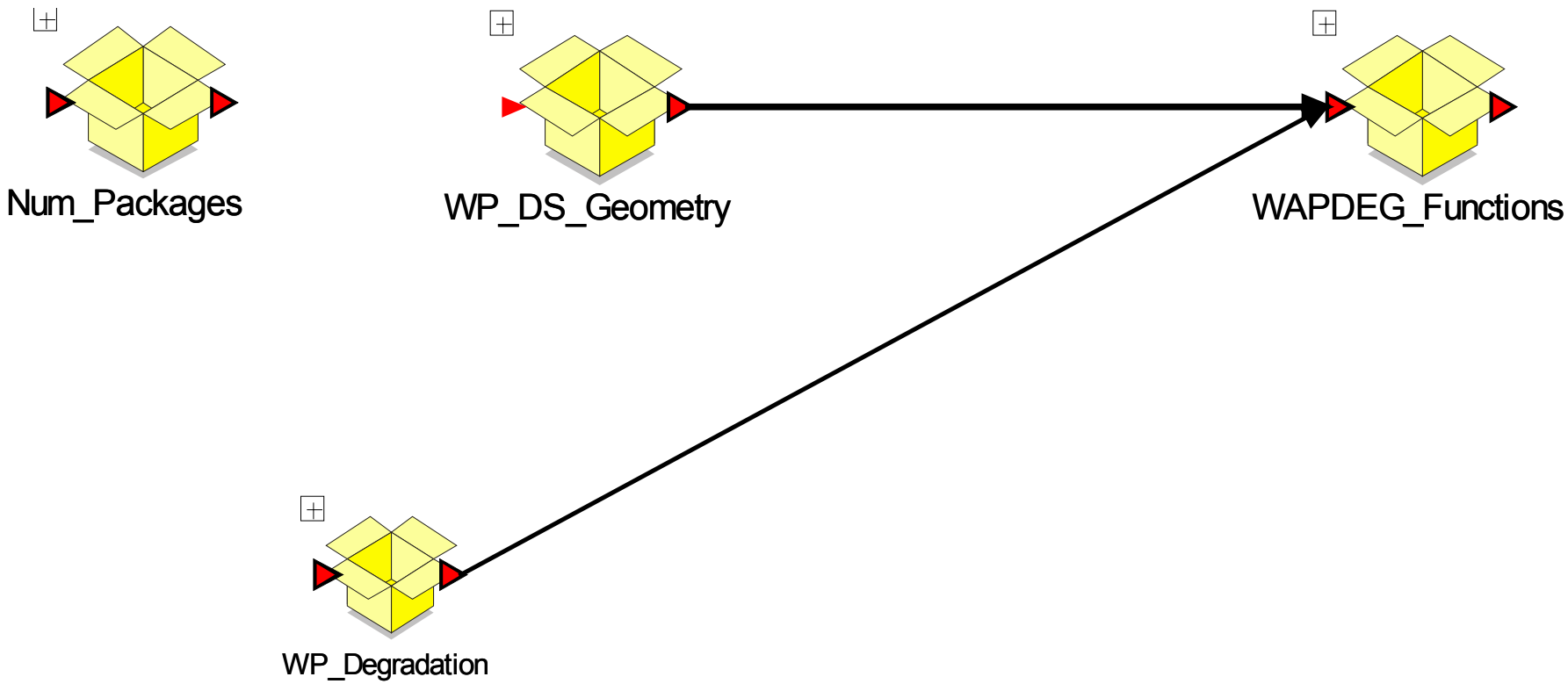
DSNF_Dissolution



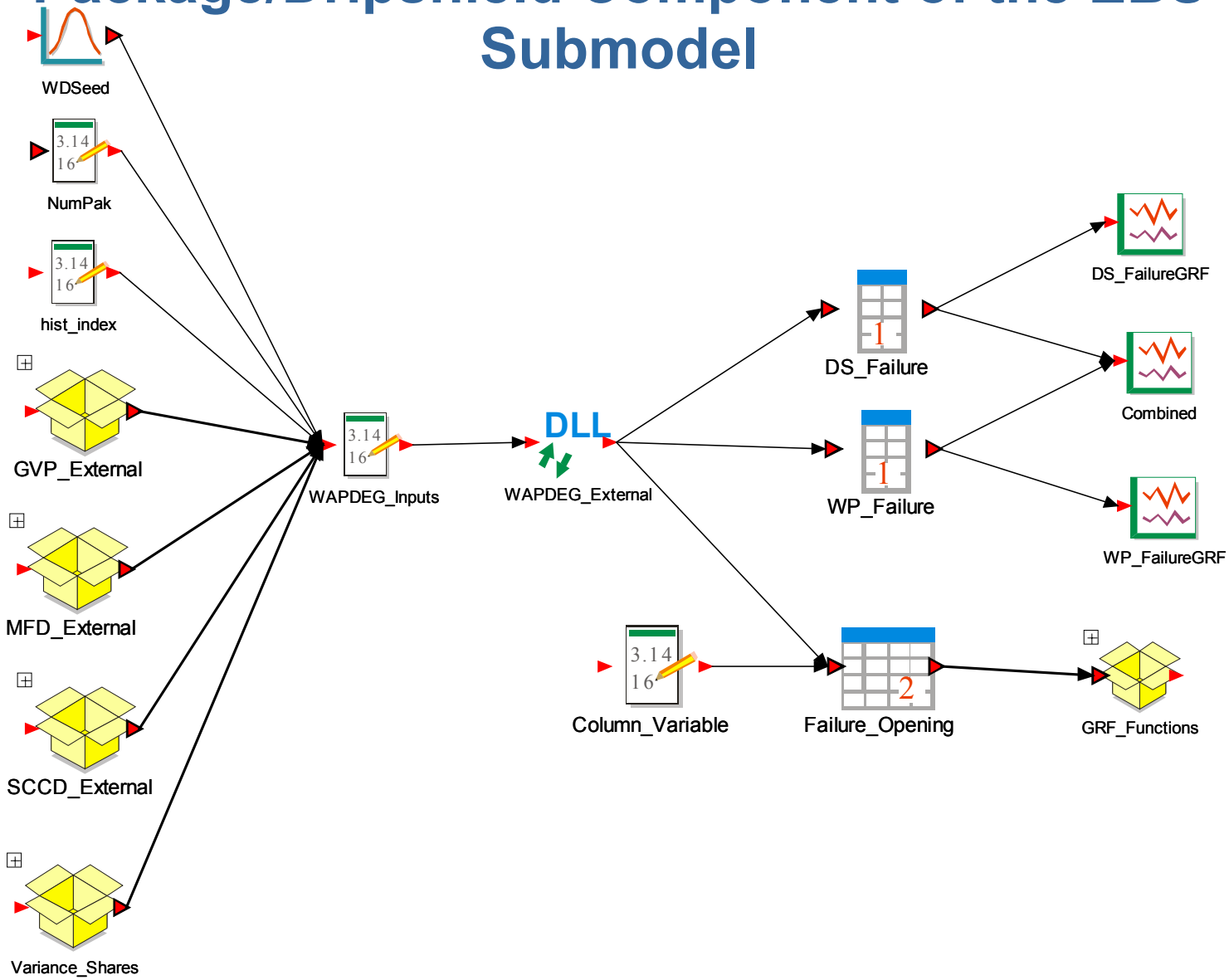
Glass_Dissolution_Parameters

Dissolution_Threshold

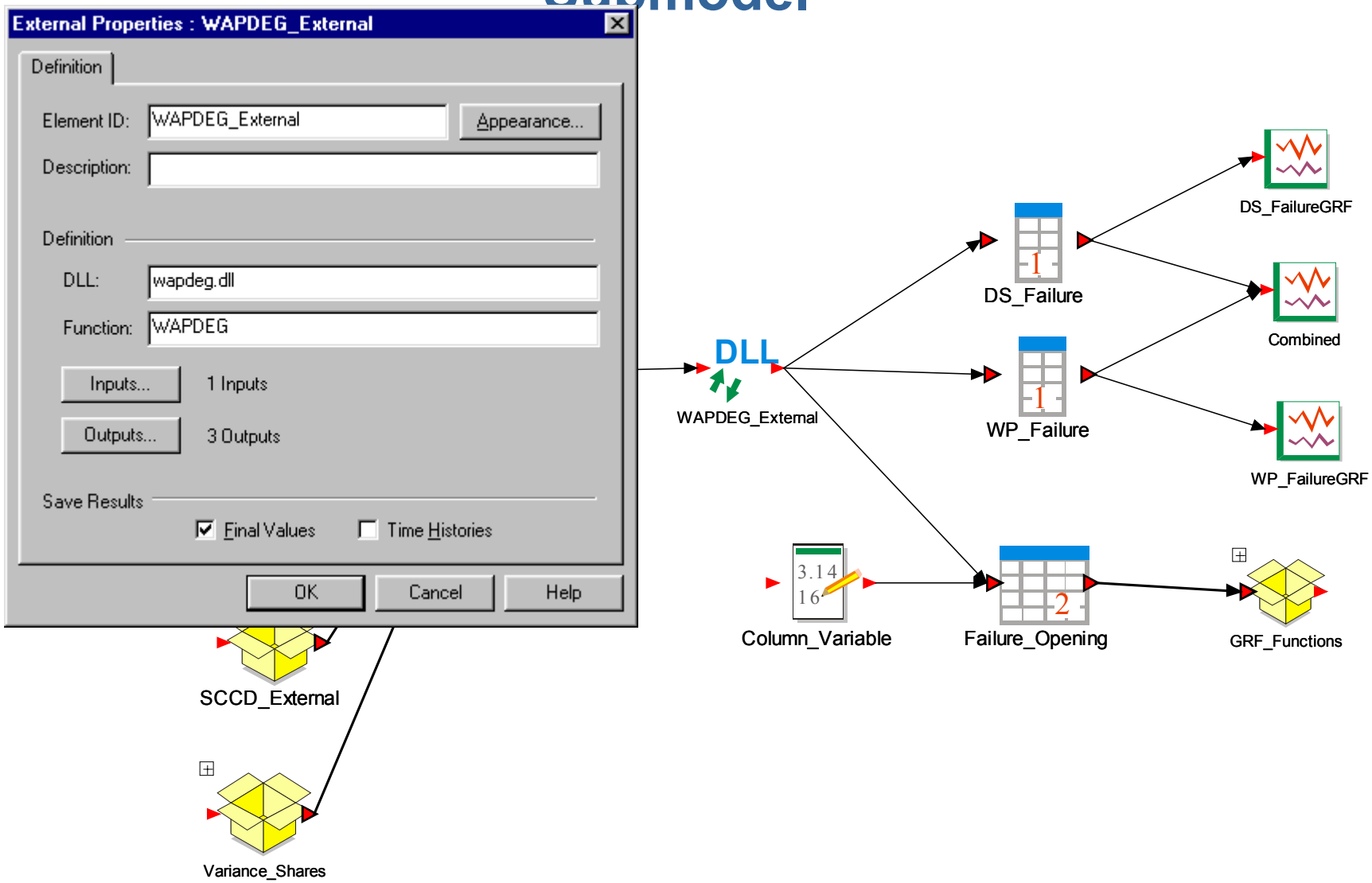
Waste Package/Dripshield Component of the EBS Submodel



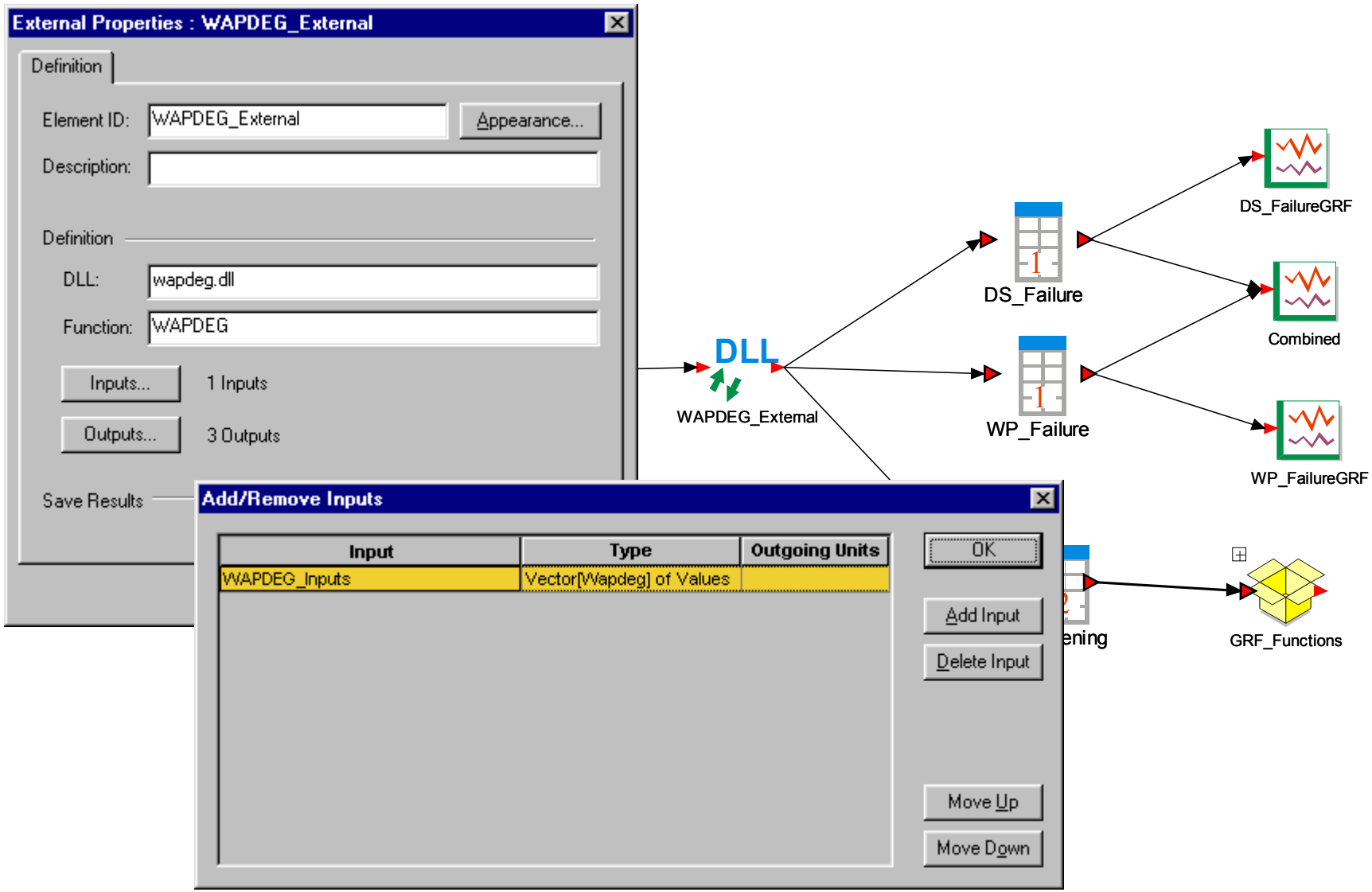
WAPDEG Calculations in the Waste Package/Dripshield Component of the EBS Submodel



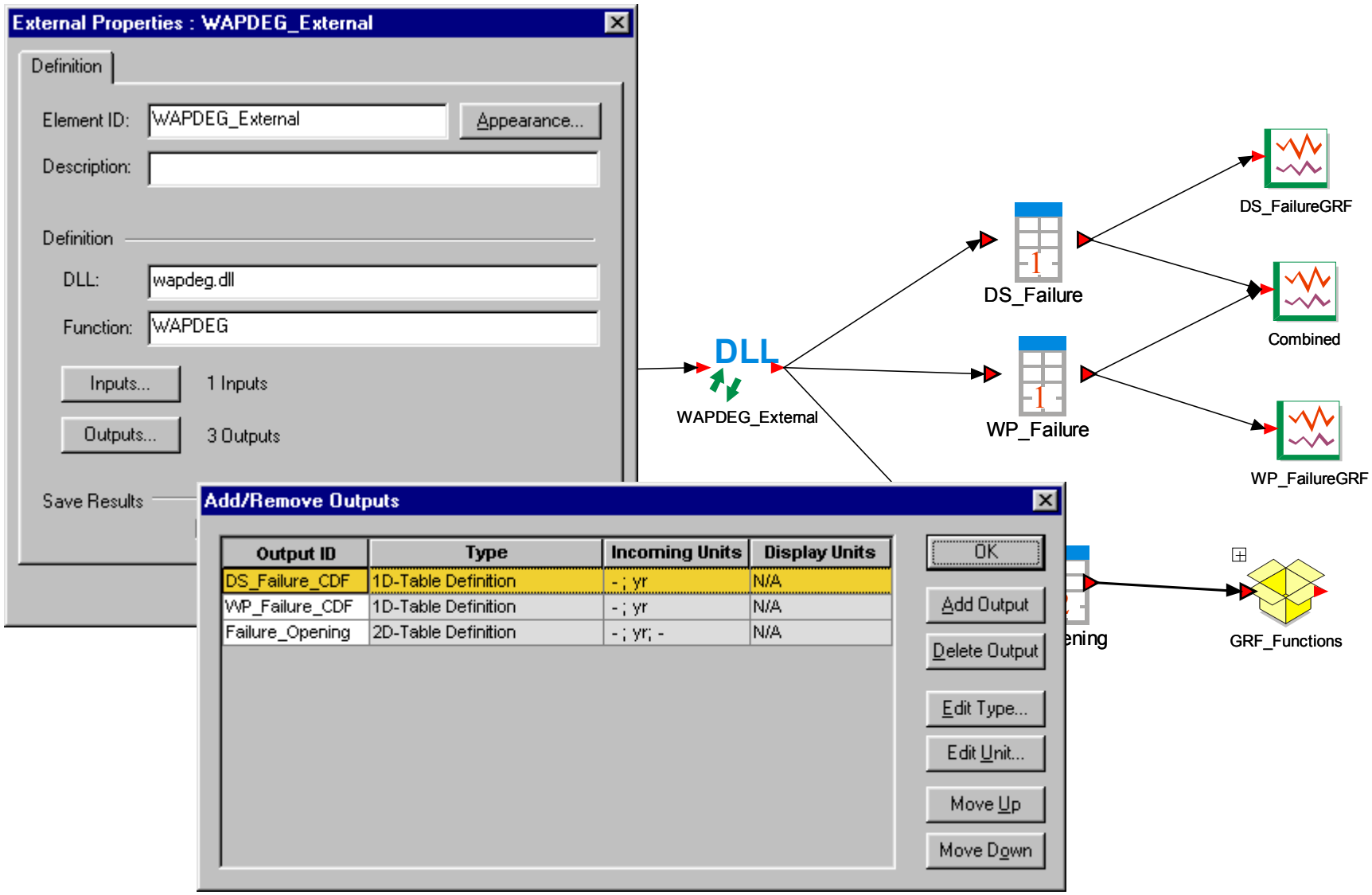
Properties Window of WAPDEG in the Waste Package/Dripshield Component of the EBS Submodel



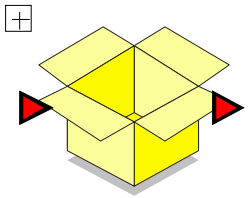
WAPDEG Inputs in the Waste Package/Dripshield Component of the EBS Submodel

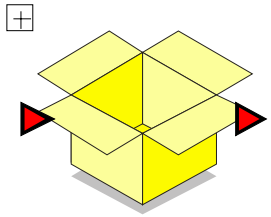


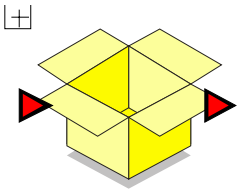
WAPDEG Outputs in the Waste Package/Dripshield Component of the EBS Submodel

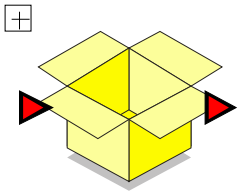


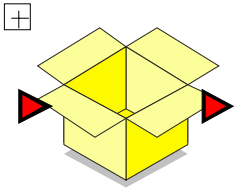
Near Field Environment - Thermohydrology Component of the EBS Submodel



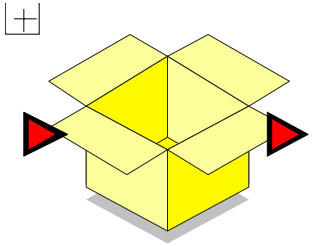




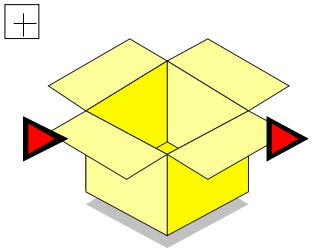




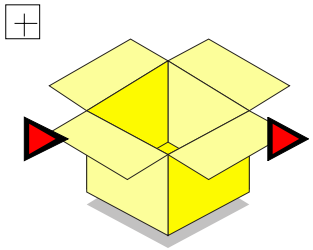
Drift Chemistry Component of the EBS Submodel



Ionic_Strength_Invert

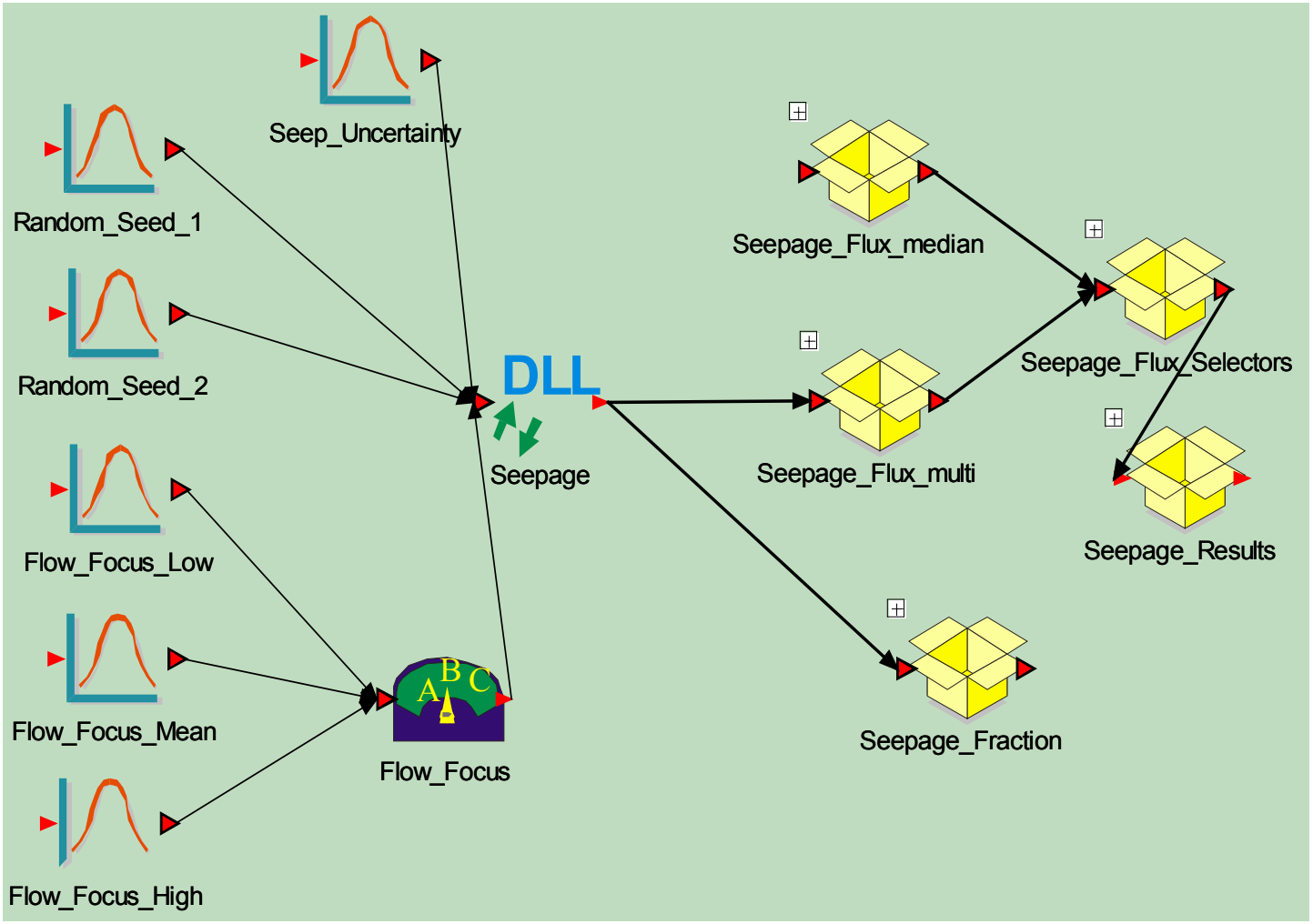


Chloride_Invert

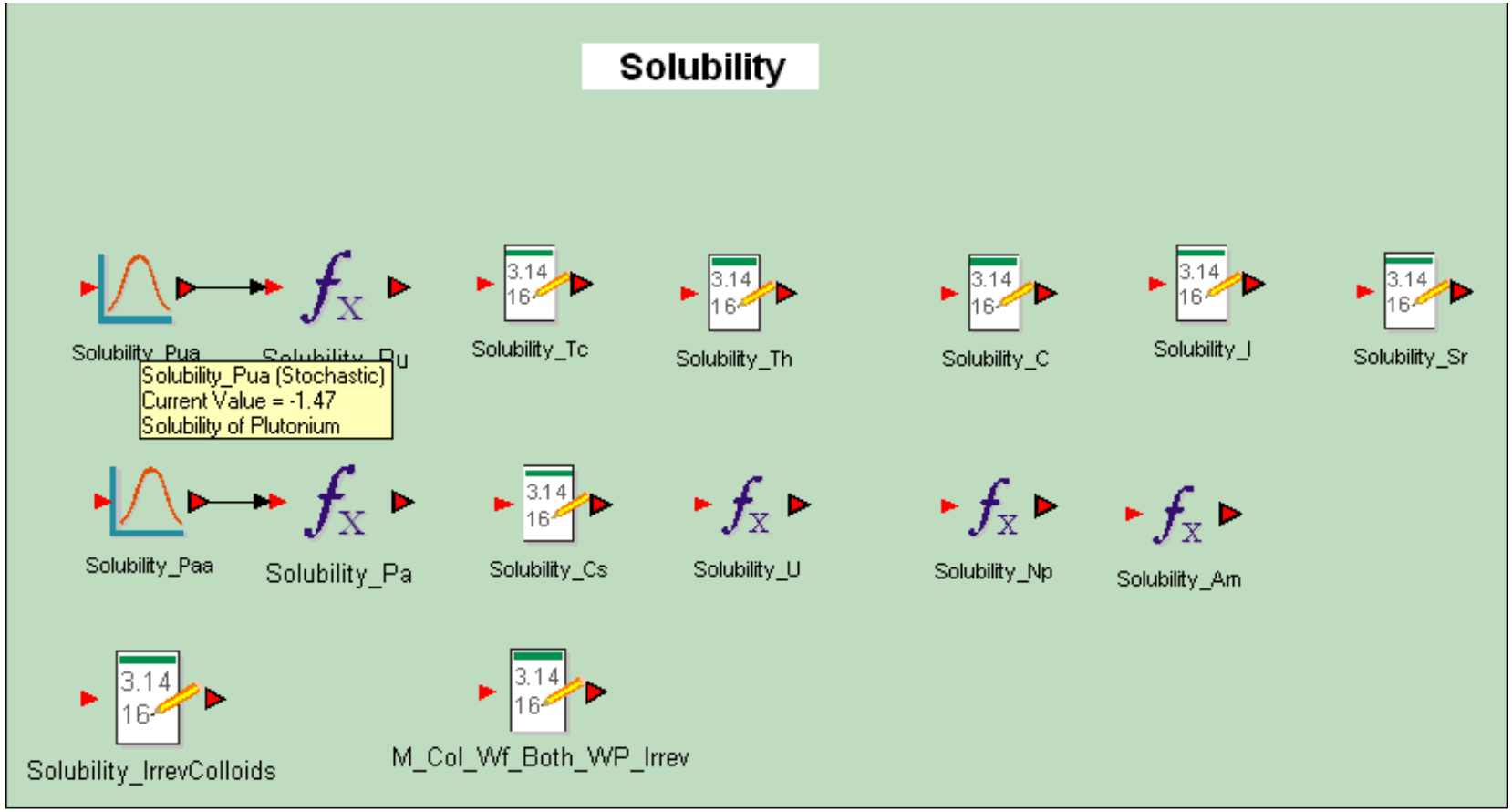


pH

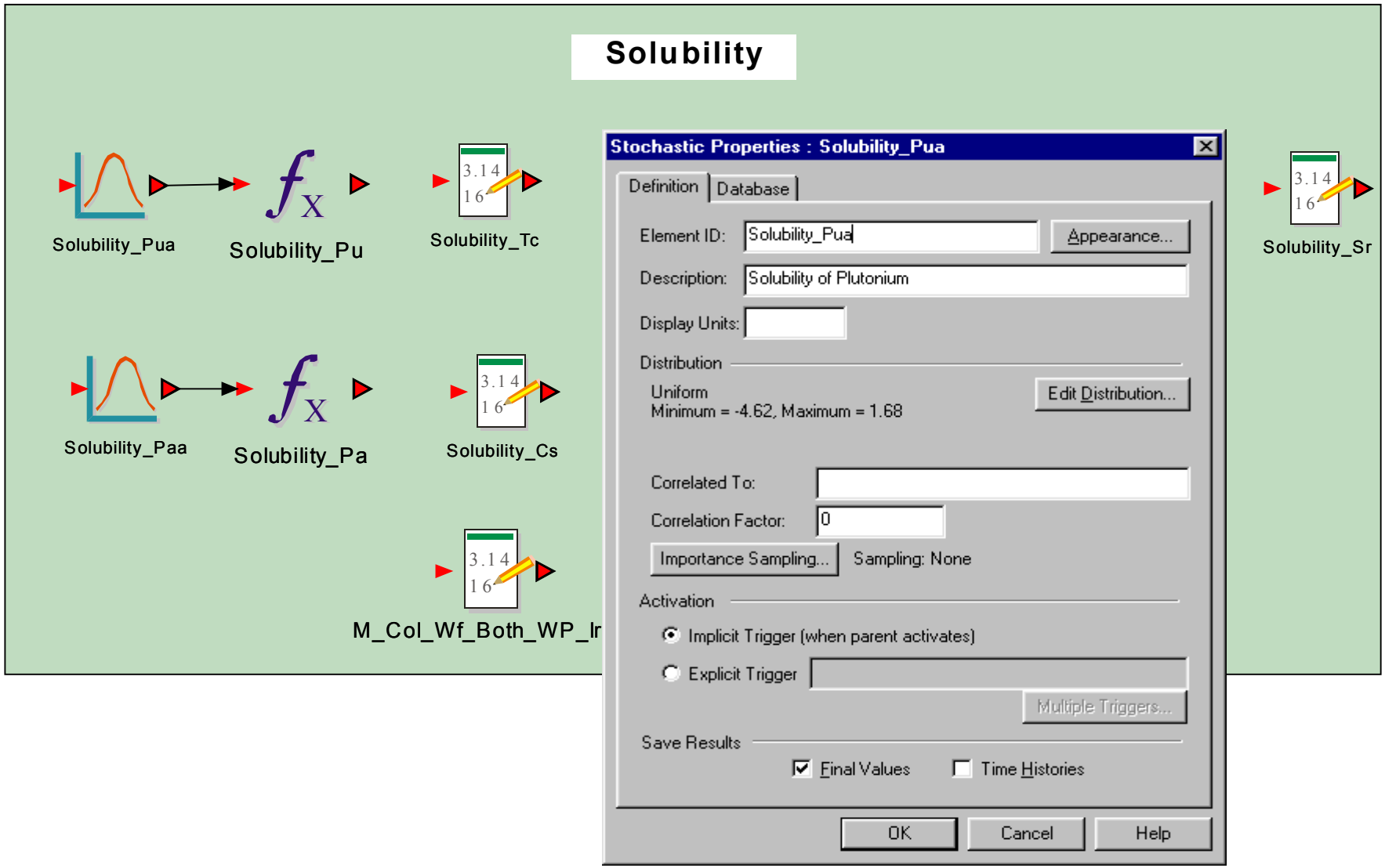
Drift Seepage Component of the EBS Submodel



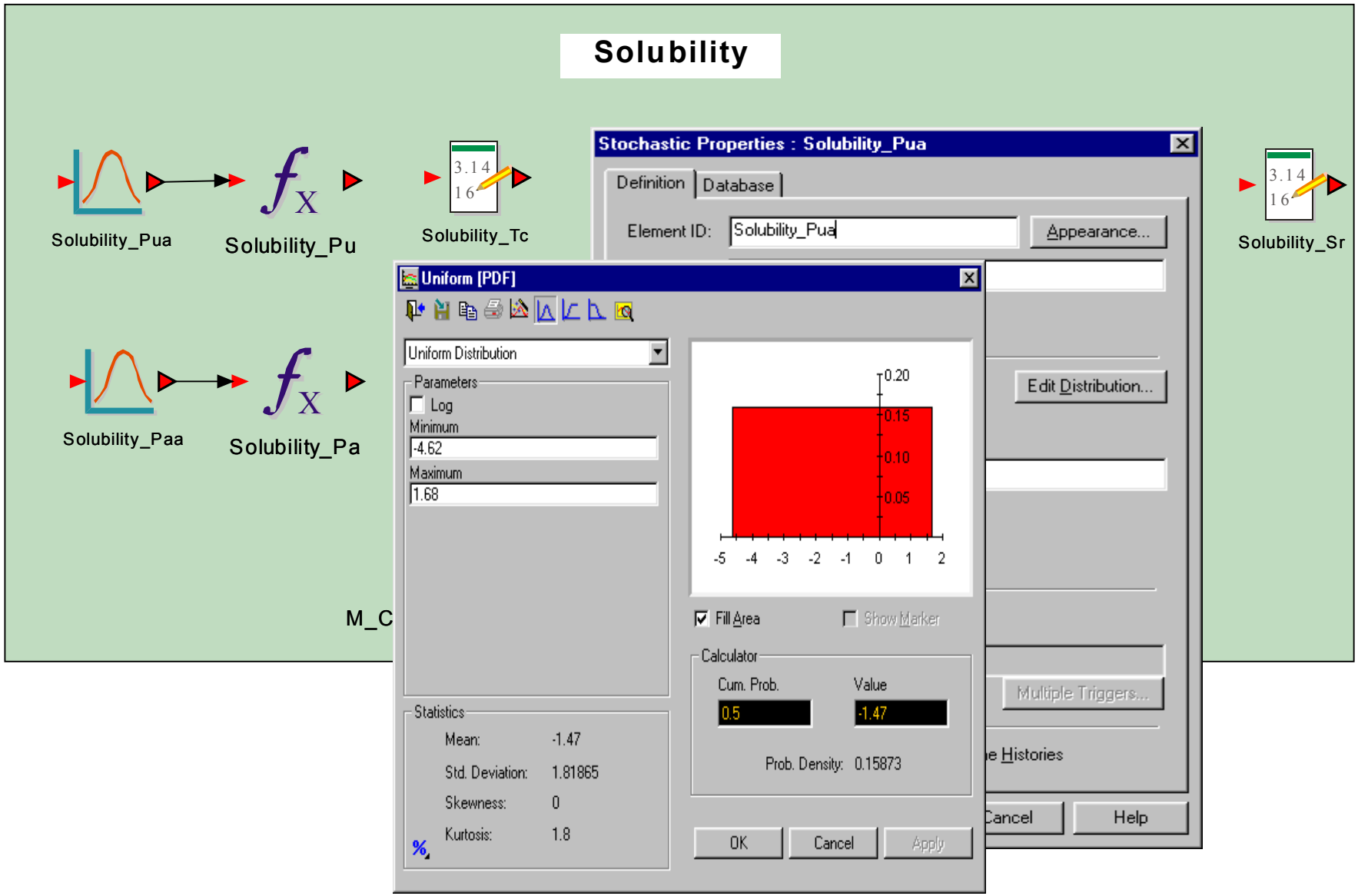
Example of Current Values of Fixed Parameters, Stochastic Parameters, and Calculations



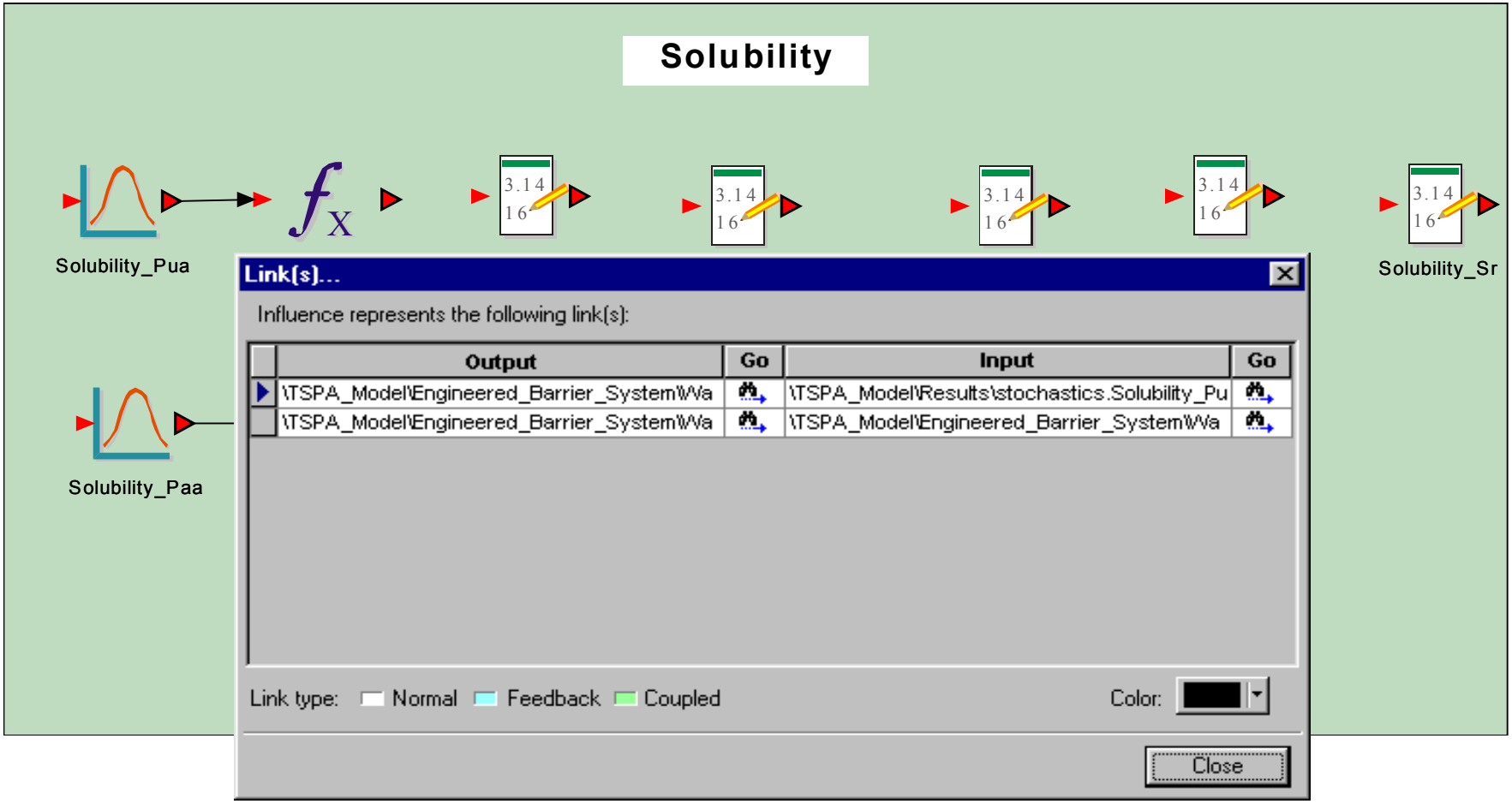
Example of Stochastic Parameter Definitions



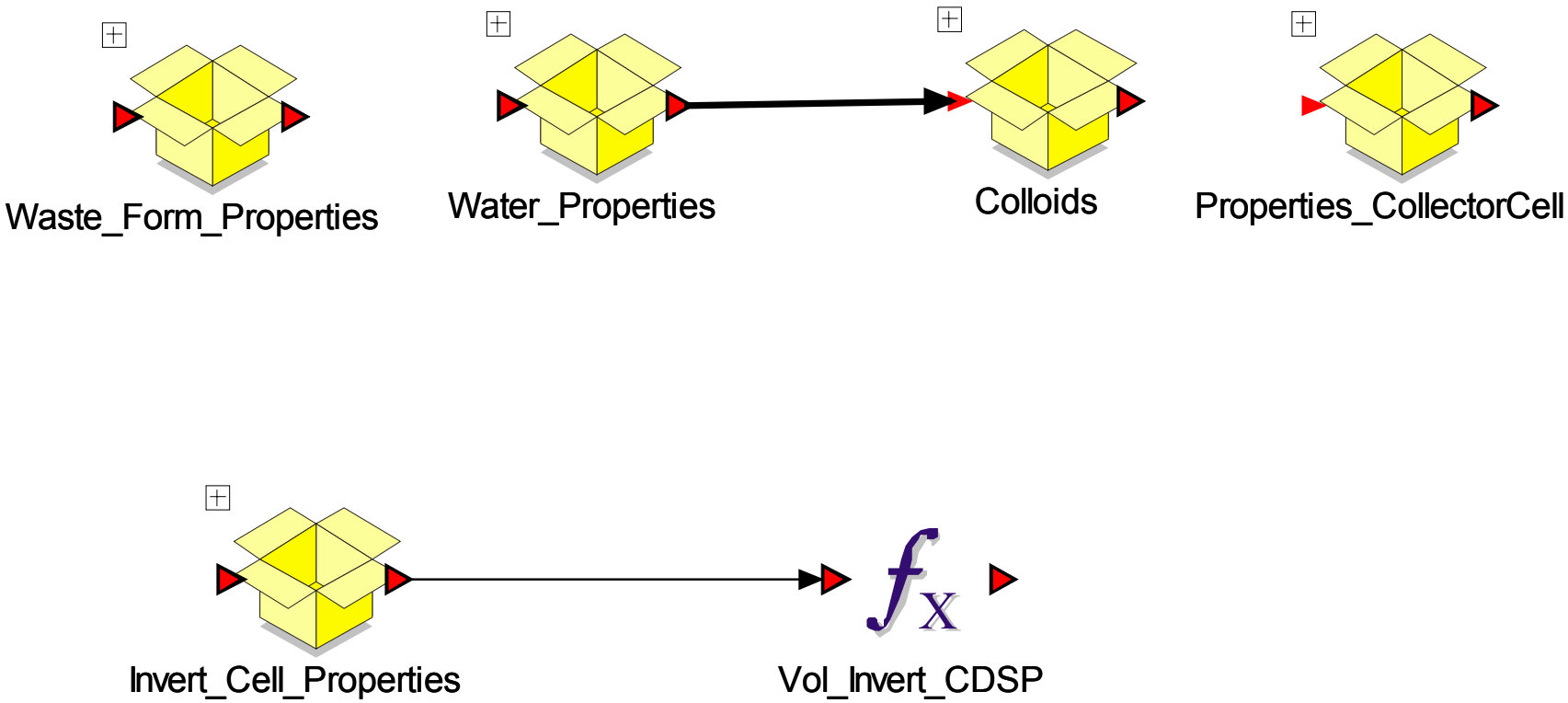
Example of Stochastic Parameter Distribution Definitions



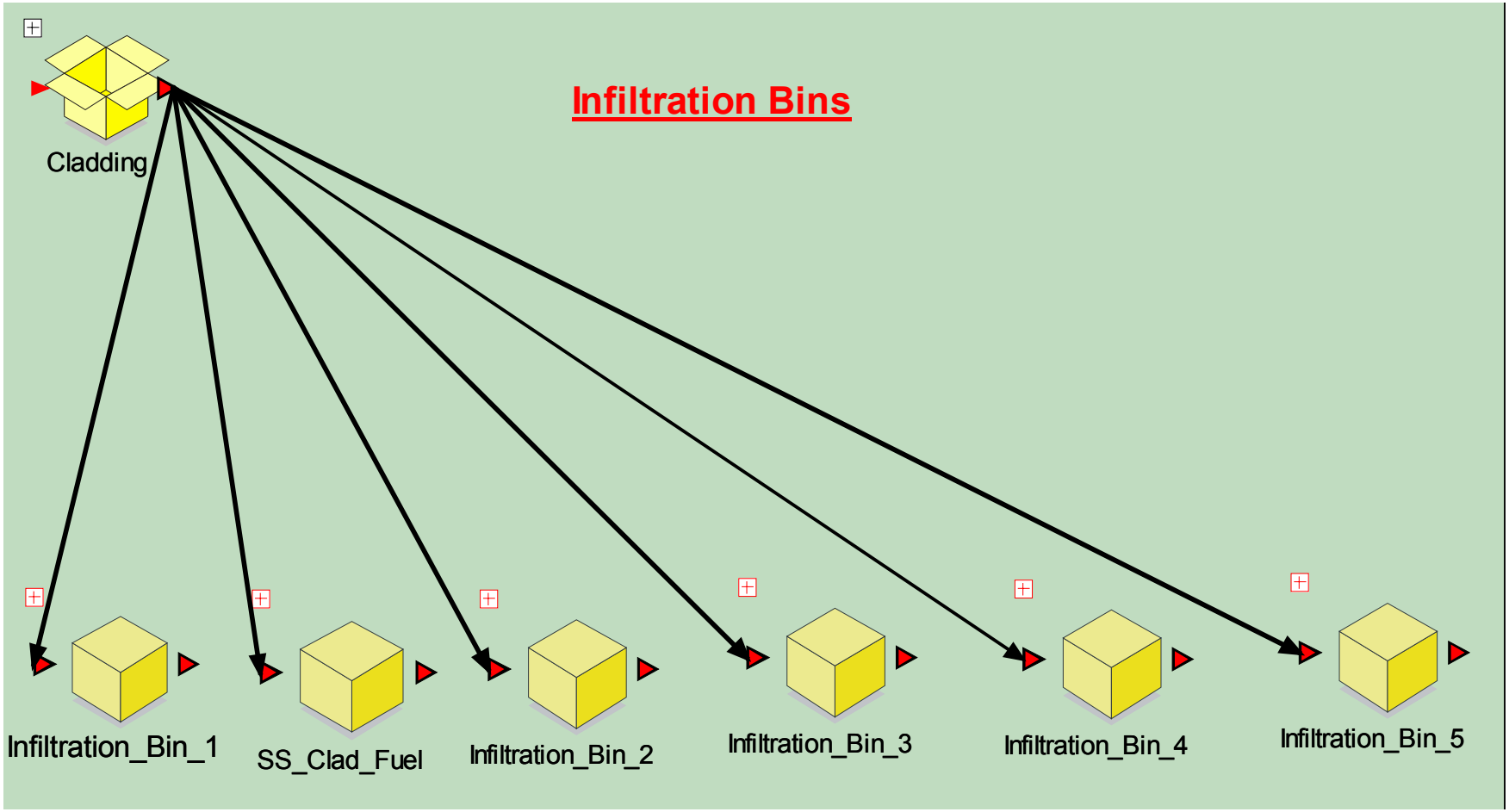
Example of Links Between Model Elements, Components, and Submodels



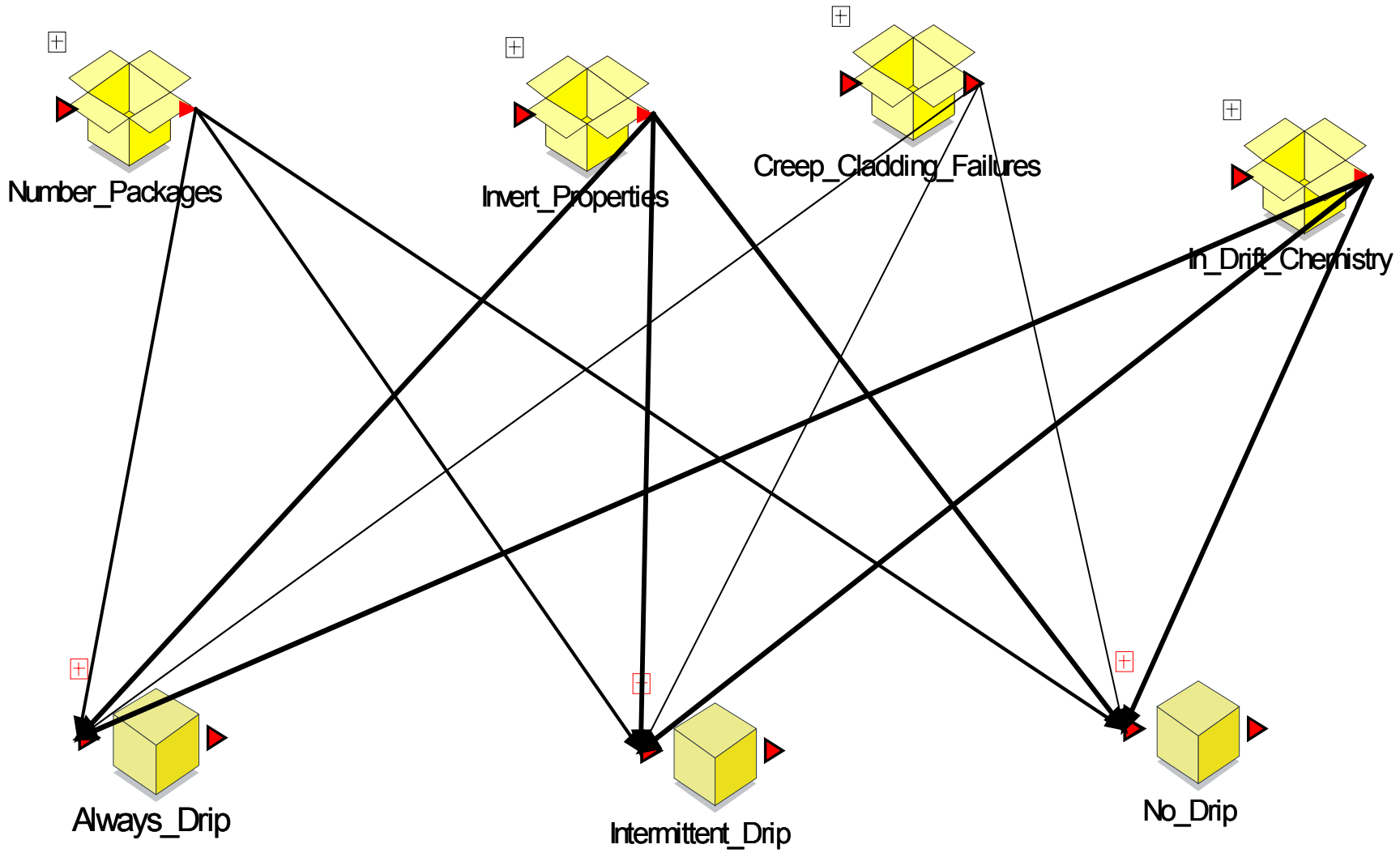
Materials Component of the EBS Submodel



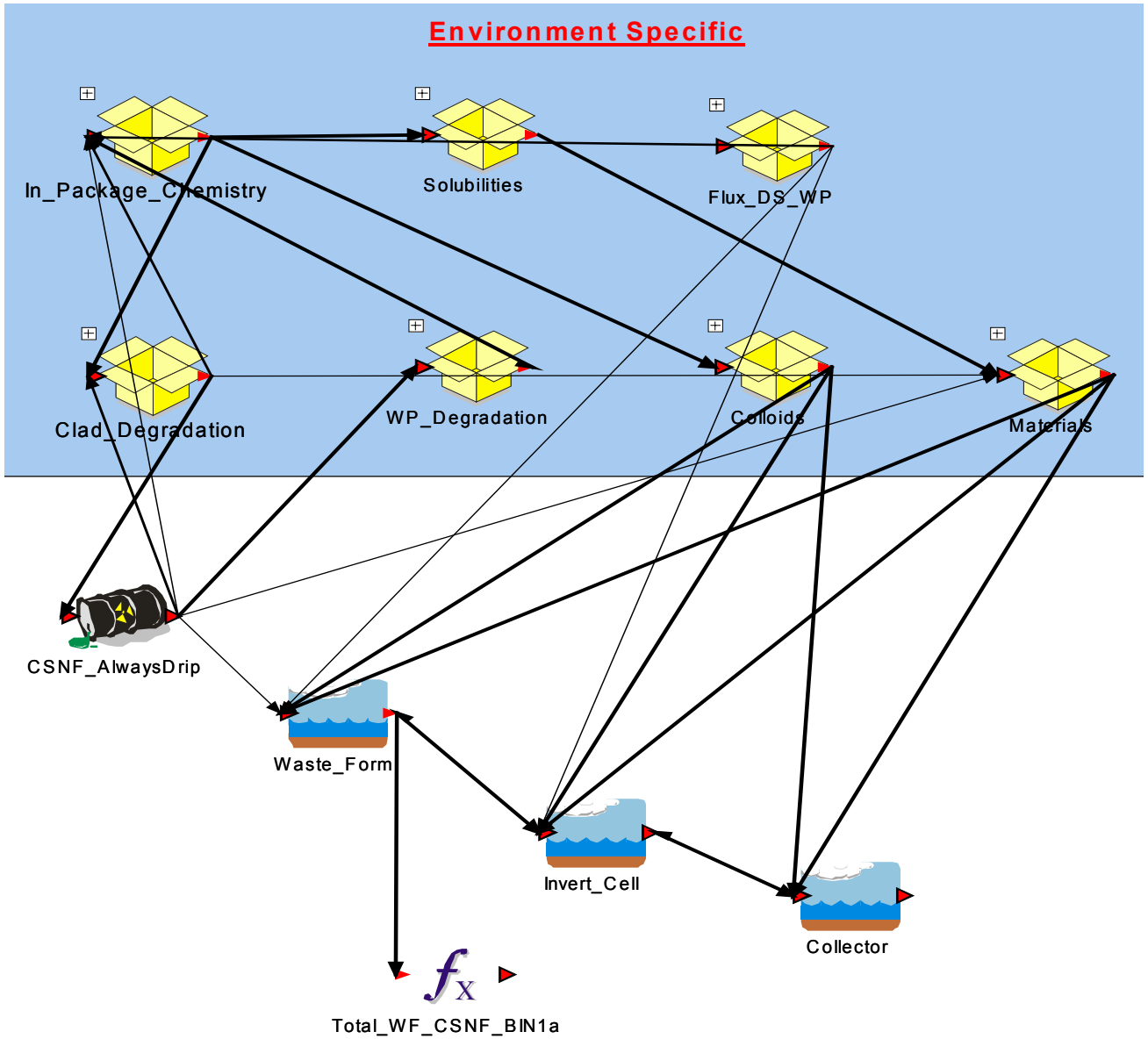
CSNF Packages Component of the EBS Submodel



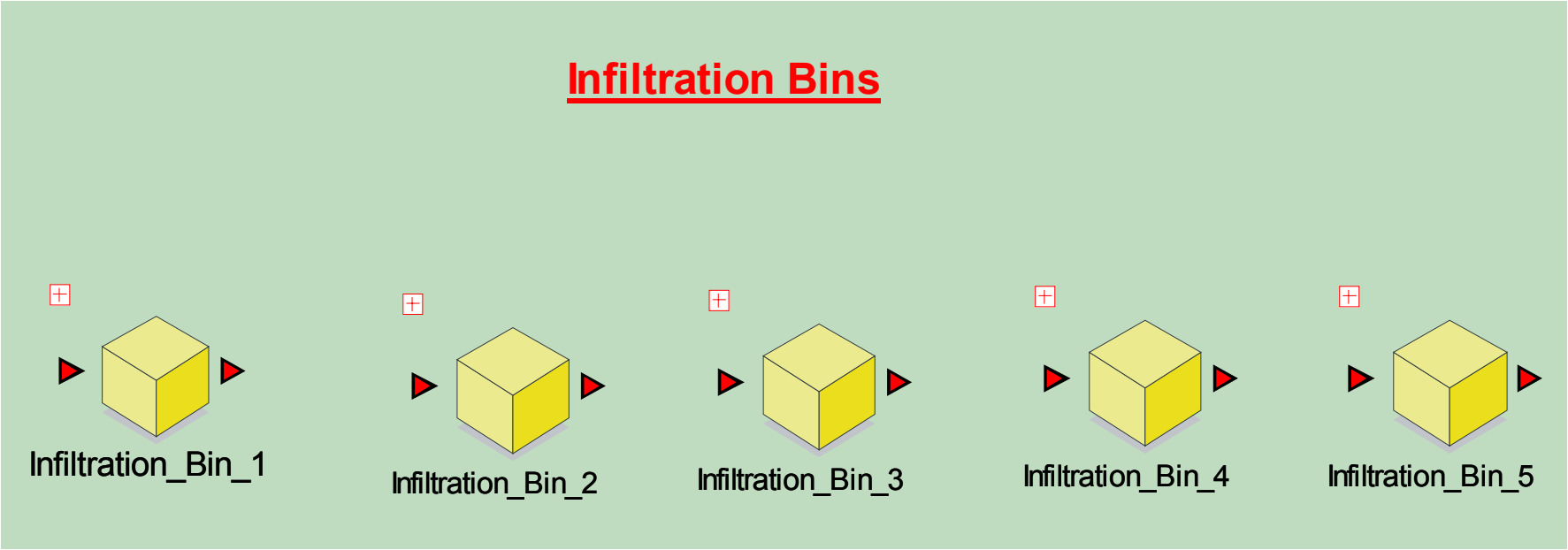
CSNF Packages Component of the EBS Submodel: Infiltration Bin 1



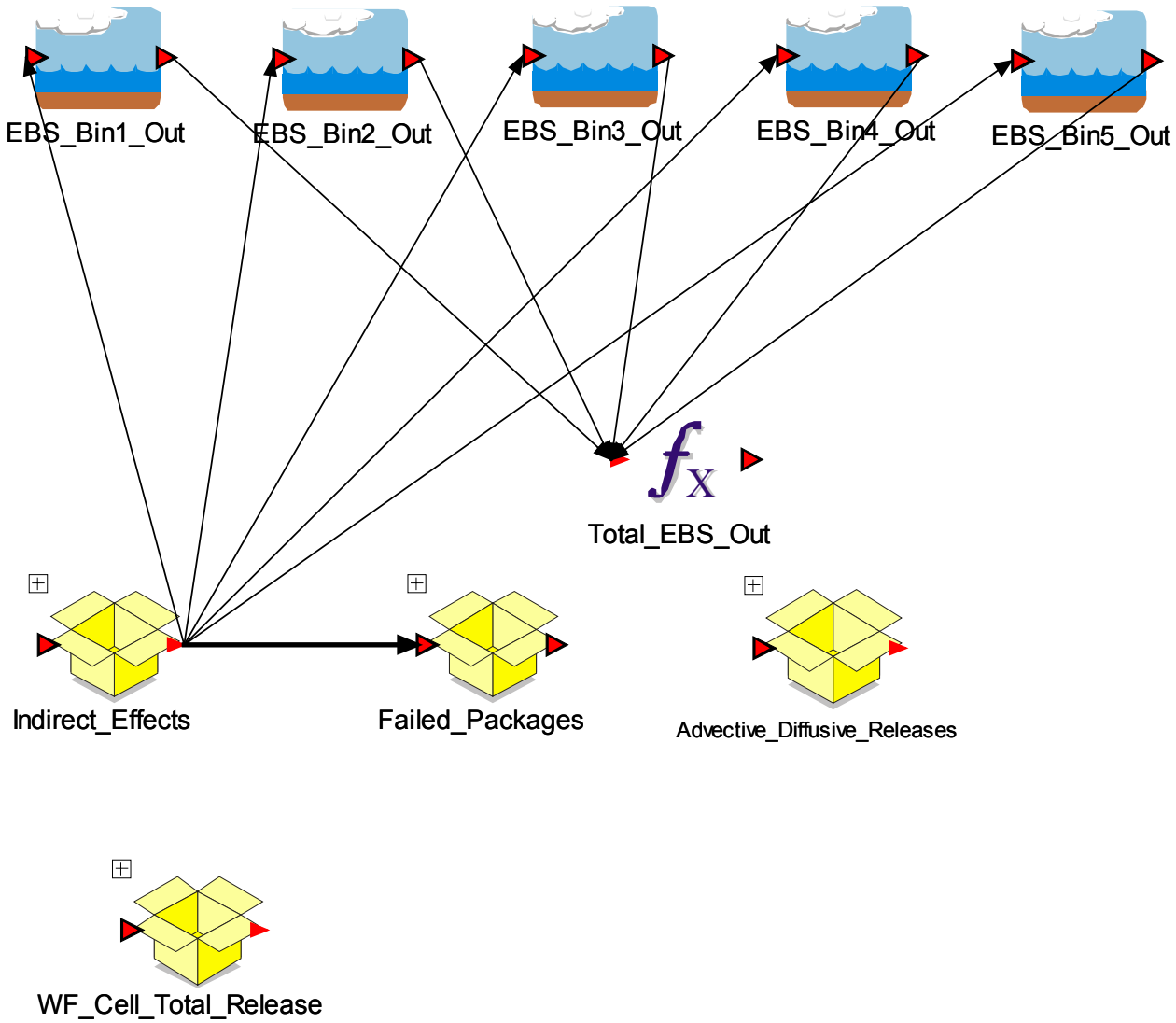
Infiltration Bin 1: Always Drip



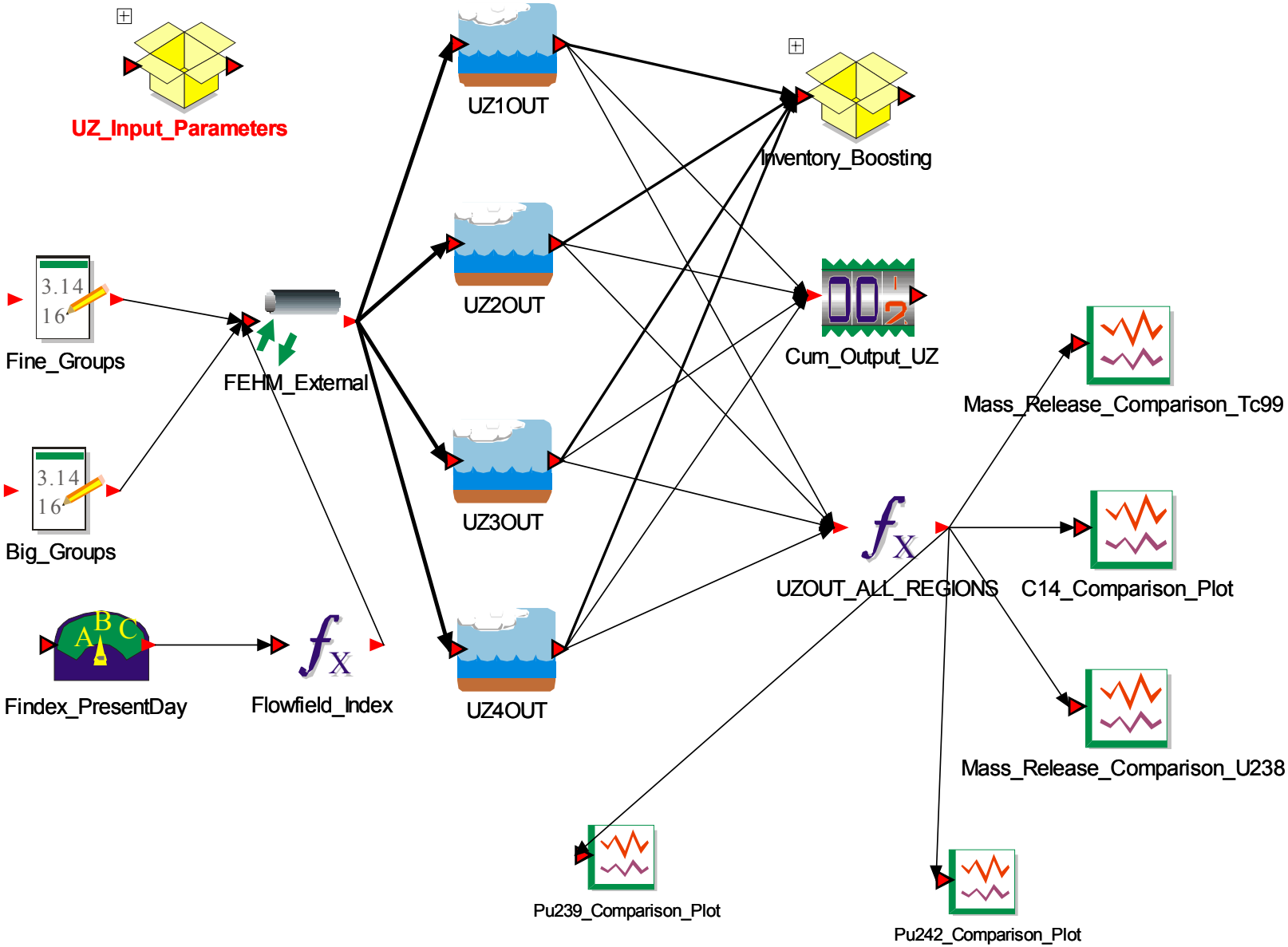
CDSP Packages Component of the EBS Submodel



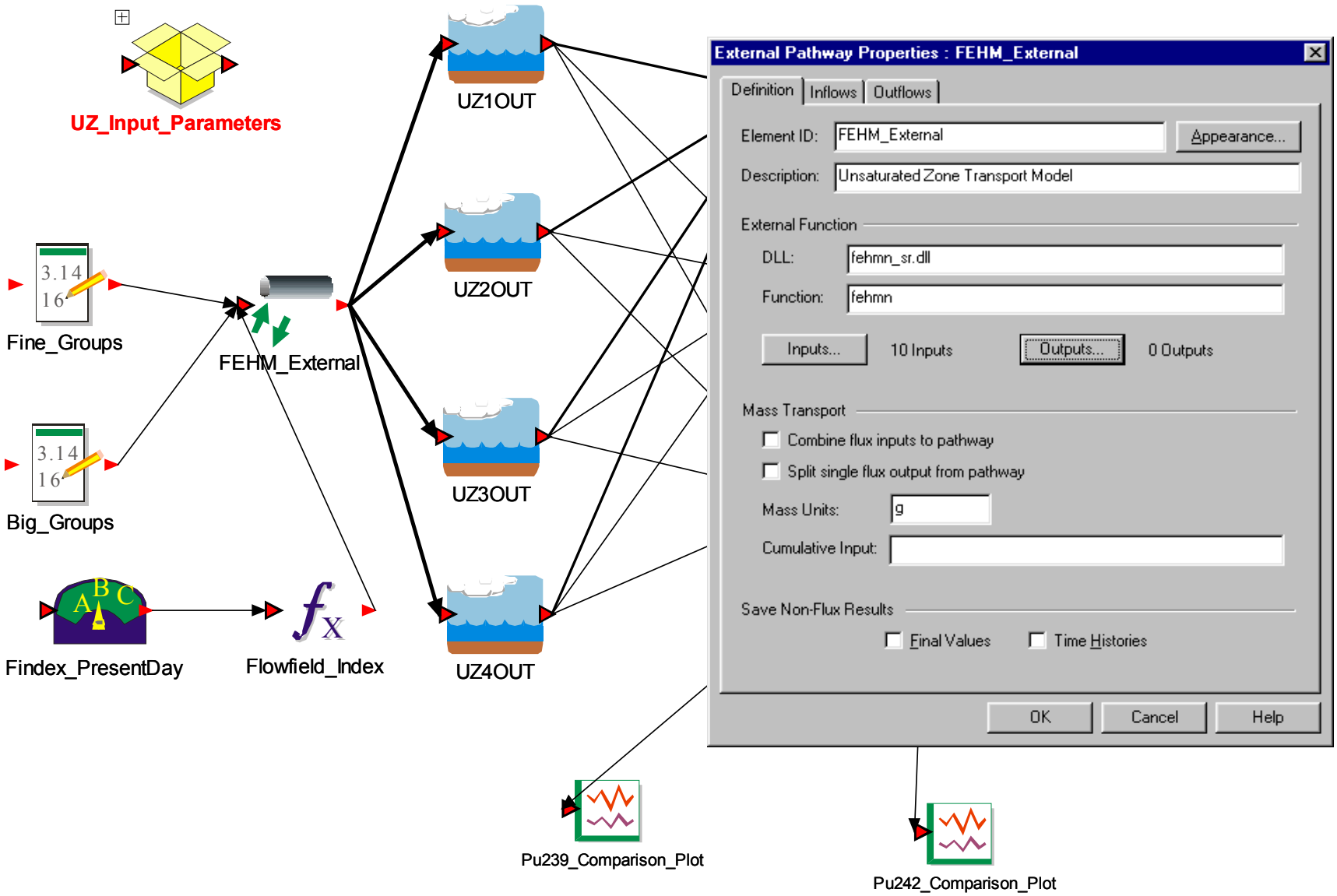
EBS Results Component of the EBS Submodel



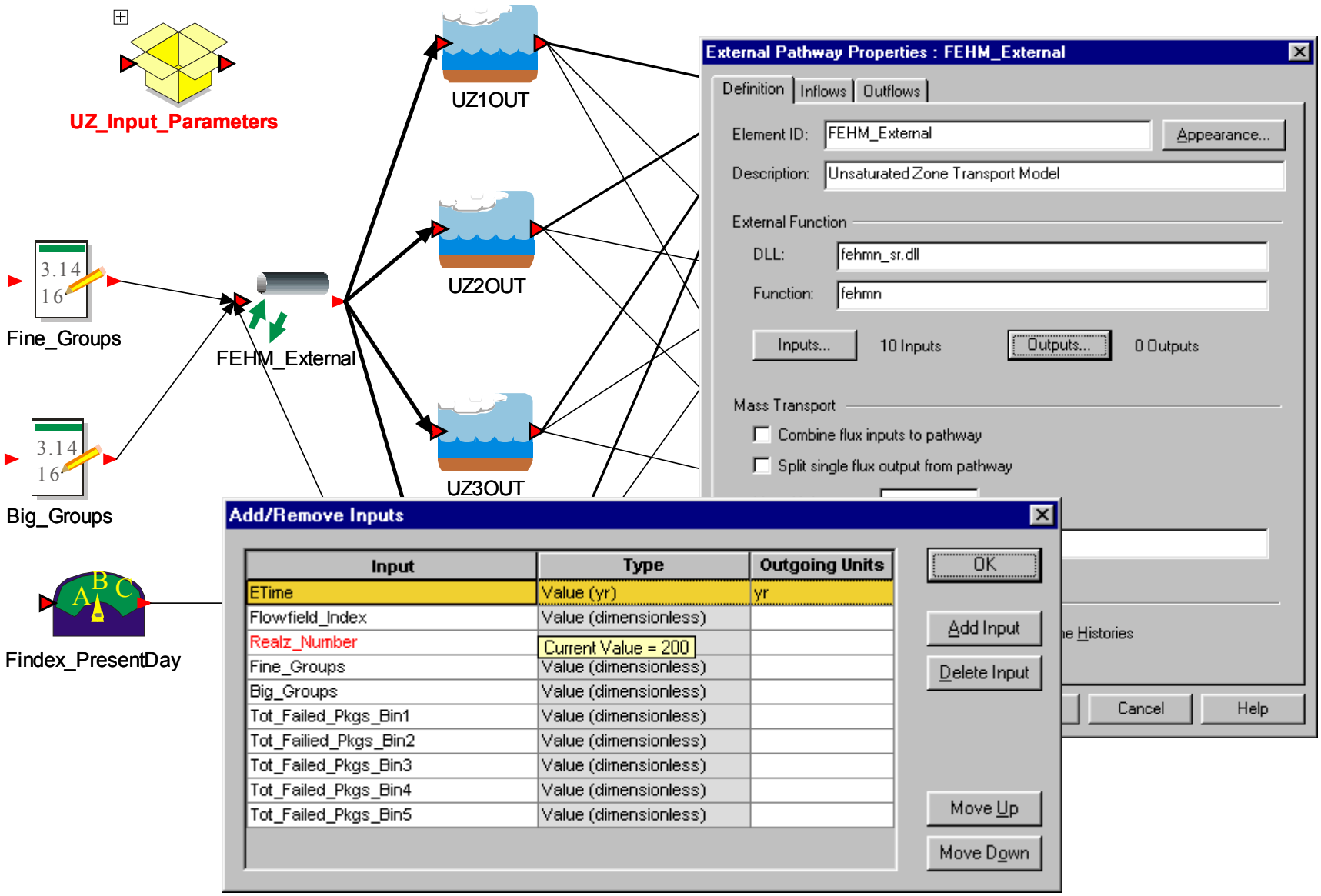
Unsaturated Zone Transport Submodel



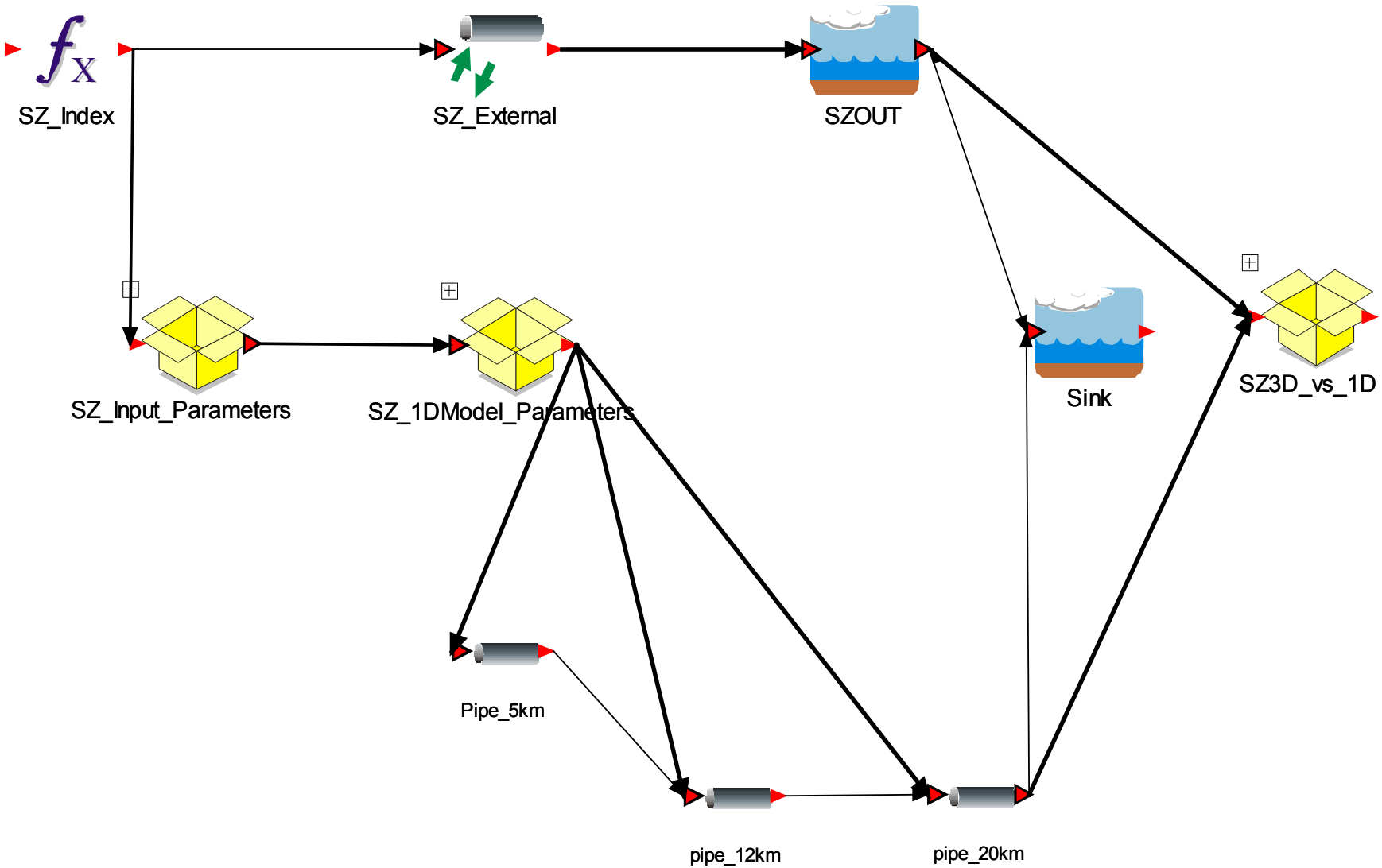
FEHM Properties Window In Unsaturated Zone Transport Submodel



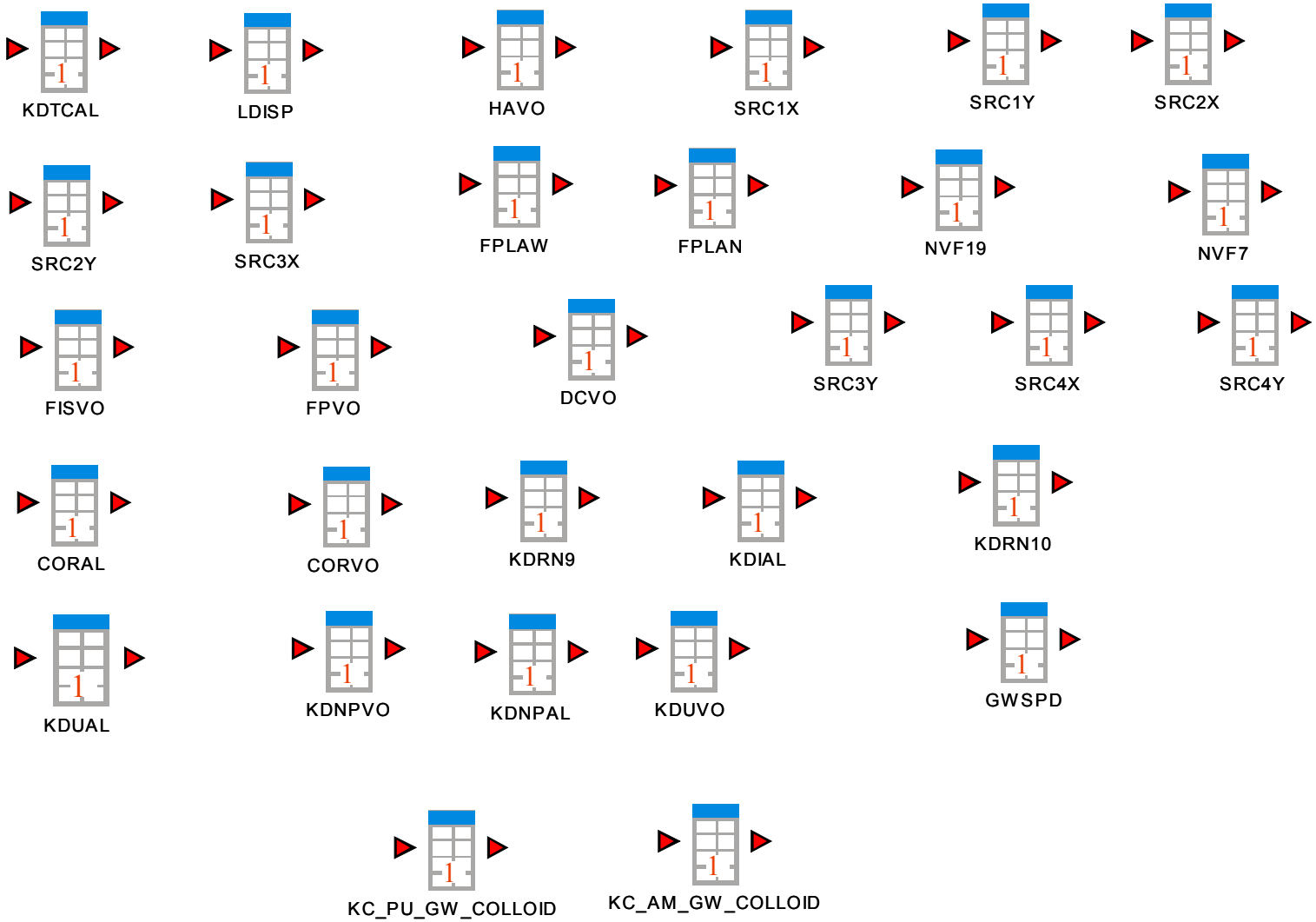
FEHM Inputs in Unsaturated Zone Transport Submodel



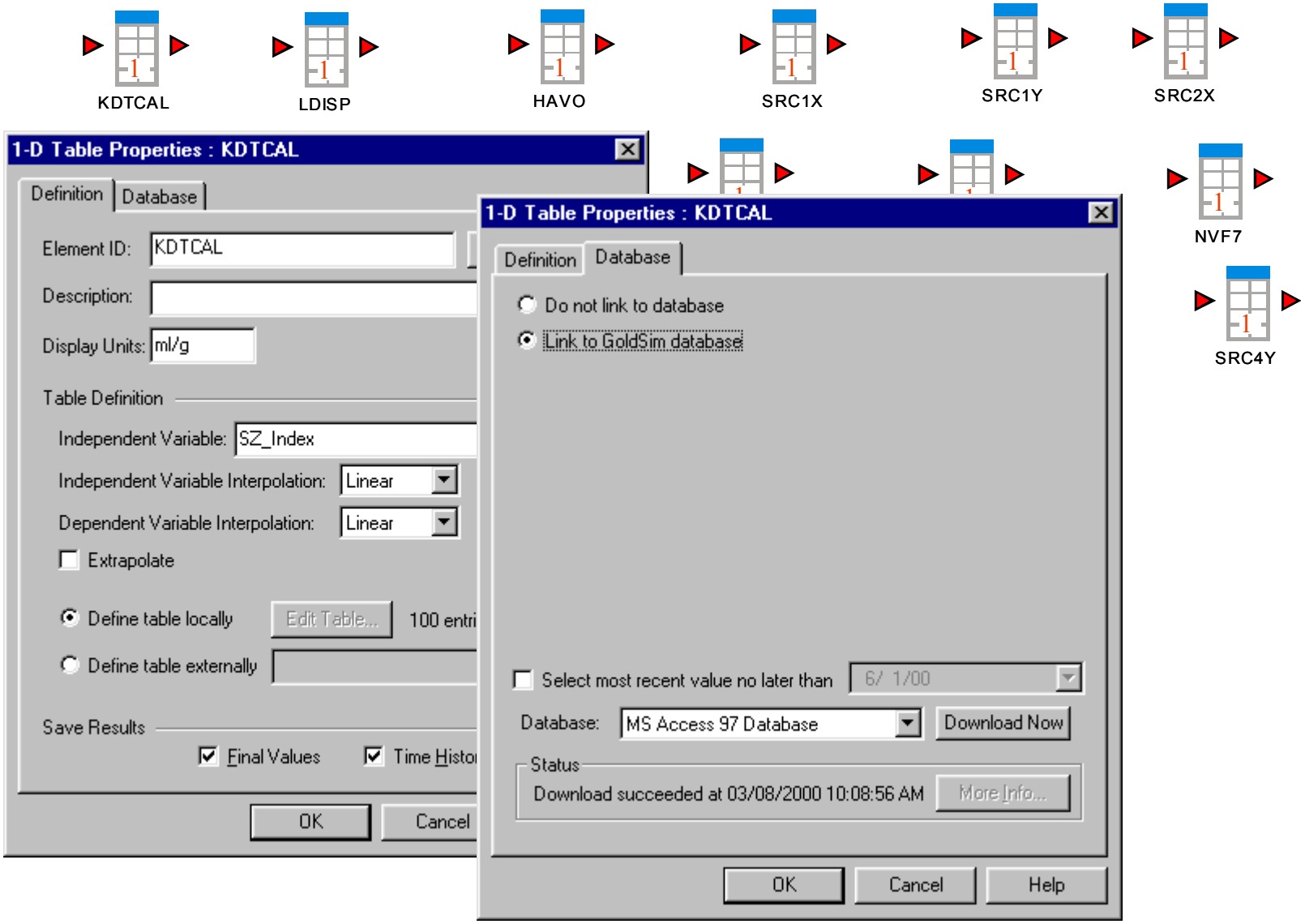
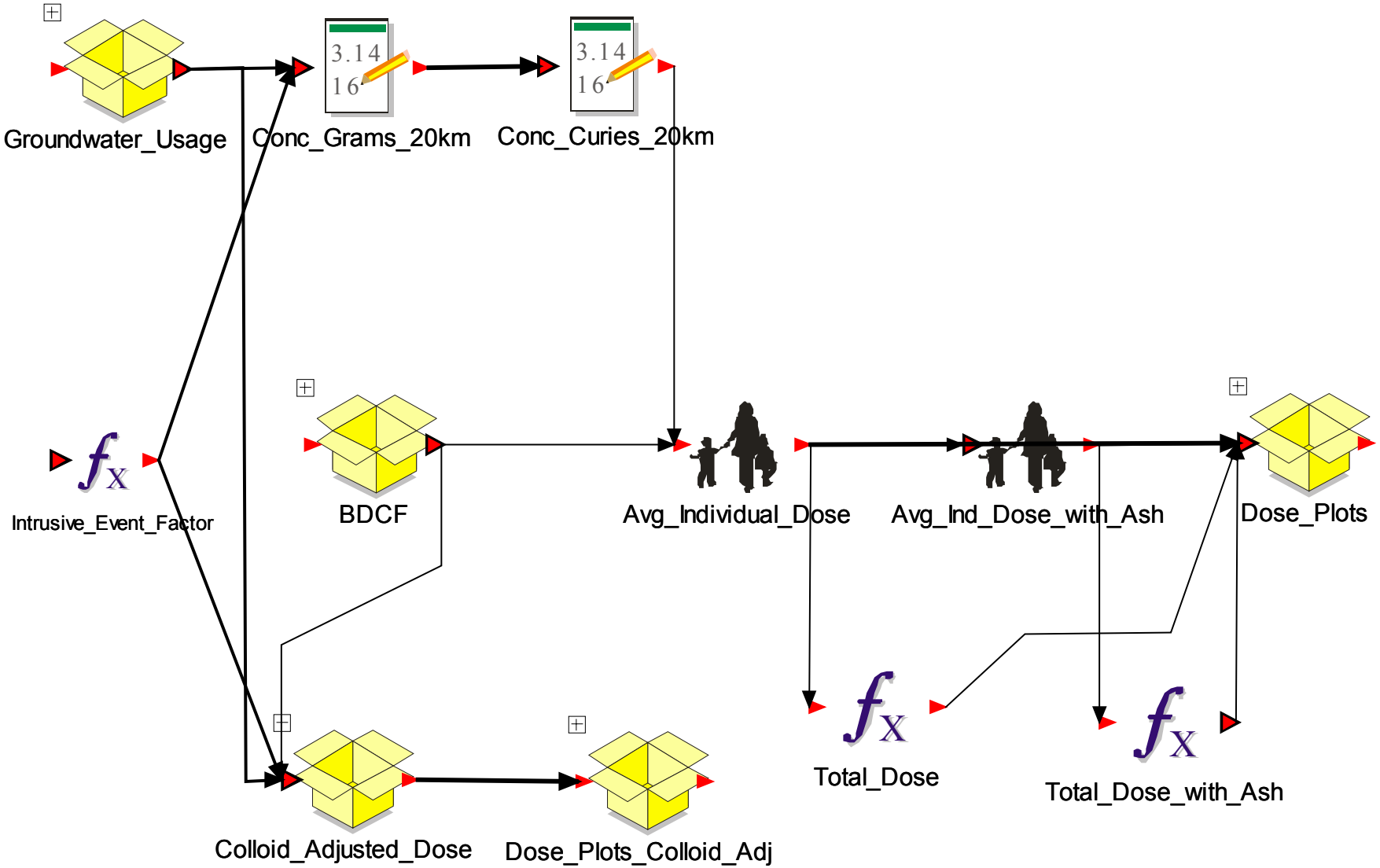
Saturated Zone Transport Submodel



SZ Input Parameter Lookup Tables In Saturated Zone Transport Submodel



Input Parameter Link to TSPA Database In Saturated Zone Transport Submodel



Biosphere Submodel