MDSS Prototype Software Architecture Overview

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MDSS Prototype Overview
Conceptual Structure from 2001

- Weather Data
- Advanced Weather Capabilities
- DOT Operations Data
- Decision Support Logic
- Road Condition Module
- Display
- External System Interface
MDSS FP Data Flow

- External Data Providers
- Data Ingest and Assimilation
- Road Weather Forecast System (RWFS)
- Road Condition Treatment Module (RCTM)
- Display
MDSS FP Data Ingest Subsystem

- RWIS
- NCEP
- Supplemental Models
- DOT Operational Data

Data Assimilation

Not Live
MDSS FP Road Weather Forecast System

**Non-NWS Observations**
- RWIS

**Supplemental Models**

**Ensemble System**
- Model | Initialization
- MM5  | AVN
- RAMS | Eta
- WRF  | RUC

**Mesoscale Model(s)**
- NSSL Eta (with Kain-Fritsch)

**NCEP Products**
- Eta  | AVN
- SYNOP | AVN MAVMOS
- METARs | MRF MEXMOS

**Data Ingest**
- Forecast Module A
- Forecast Module B
- Forecast Module C
- Forecast Module D
- Forecast Module N

**Forecast Integrator**
- Post Processor
- Forecast Product

**Standard Data**
NCAR- Road Weather Forecast System

Data Ingest

- Forecast Module A
- Forecast Module B
- Forecast Module C
- Forecast Module D
- Forecast Module N

Forecast Integrator

Post Processor

Forecast Product

NCEP Data
RWIS Data
Meso Data
Other Data
Functional Prototype - Cycles

The functional prototype operates in three primary modes:

1) Provide results with no maintenance actions.

2) Provide results based on automated maintenance recommendations (standard rules of practice).

3) Allow user to modify maintenance recommendations.
Road Condition & Treatment Module Data Flow

- Weather Forecast Products
- Roadway Configuration Data
- Traffic Data
- Road Temperature and Snow Depth Module
- Net Mobility Module
- Rules of Practice Module
- Chemical Concentration Module
- Road Conditions and Treatments
- Display
- What Ifs?
MDSS Display System