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Visualising Decision Support Systems
James Turrell Skyspace 2006
Visual Turn and Science

- A huge field – from Microscopy to Machine Vision to Optics to Imaging Systems
- Visual Culture – Visual Studies
- A Picture is worth 10,000 words!
- Visual Decision Support System VDSS:
- Optimise Decision Support Systems
The Next Generation (XRWIS) RouteForecast

Route-by-route suggested action based on underlying RST & condition forecasts
Decision Algorithm

• Suggested actions colour coded per route:

  **RED** - Route requires salting
  Mean RST <0 degC & Ice/Frost/Snow Forecast

  **AMBER** - Standby: action may be needed
  Mean RST >0 <1 degC  OR  RST <0 Road Dry

  **GREEN** - No salting required
  Mean RST >1 degC

• The algorithm can be customised as per customers’ requirements.
Methods of Delivery

• An increasingly mobile workforce makes providing critical information to key workers both difficult and essential.
• No longer do staff need to be present at their desk or even have access to a computer to view the latest forecasts.
• A mobile workforce can access up to date forecasts Whilst on the move.
• Route Forecasts can be viewed on mobile phones and PDAs!
Route-by-route suggested action based on underlying RST & condition forecasts
Weather Warnings: Details of severe weather forecast

24 Hour Support: Telephone contact details

RSS Data Feed: ‘Subscribe’ to RSS weather updates & alerts

Verification: Accuracy assessment statistics

Account: Manage user details, passwords, active email addresses

Help: User guide, technical contact details, glossary
The Next Generation (XRWIS)
RouteForecast

Route-by-route suggested action based on underlying RST and condition forecasts
Time slices of predicted RST every hour for thousands of sites around the road network
Time slices of predicted road conditions every hour for thousands of sites around the road network
The Sky-View Factor (SVF) has been proven to play a dominant role in the variation of RST.

To accurately predict RST variation a forecasting system needs to include this factor.
Conclusions

Visual Decision Support Systems will:

– Revolutionise winter maintenance with route based forecasts and decision making.
– Provide dedicated forecasts for each salting route using mesoscale model data.
– Make decisions easier, improve accuracy & safety, reduce delays and provide consistent Levels of Service.
– Lead on to selective salting and dynamic routing