

# FAA PAVEAIR Update & Future Improvements

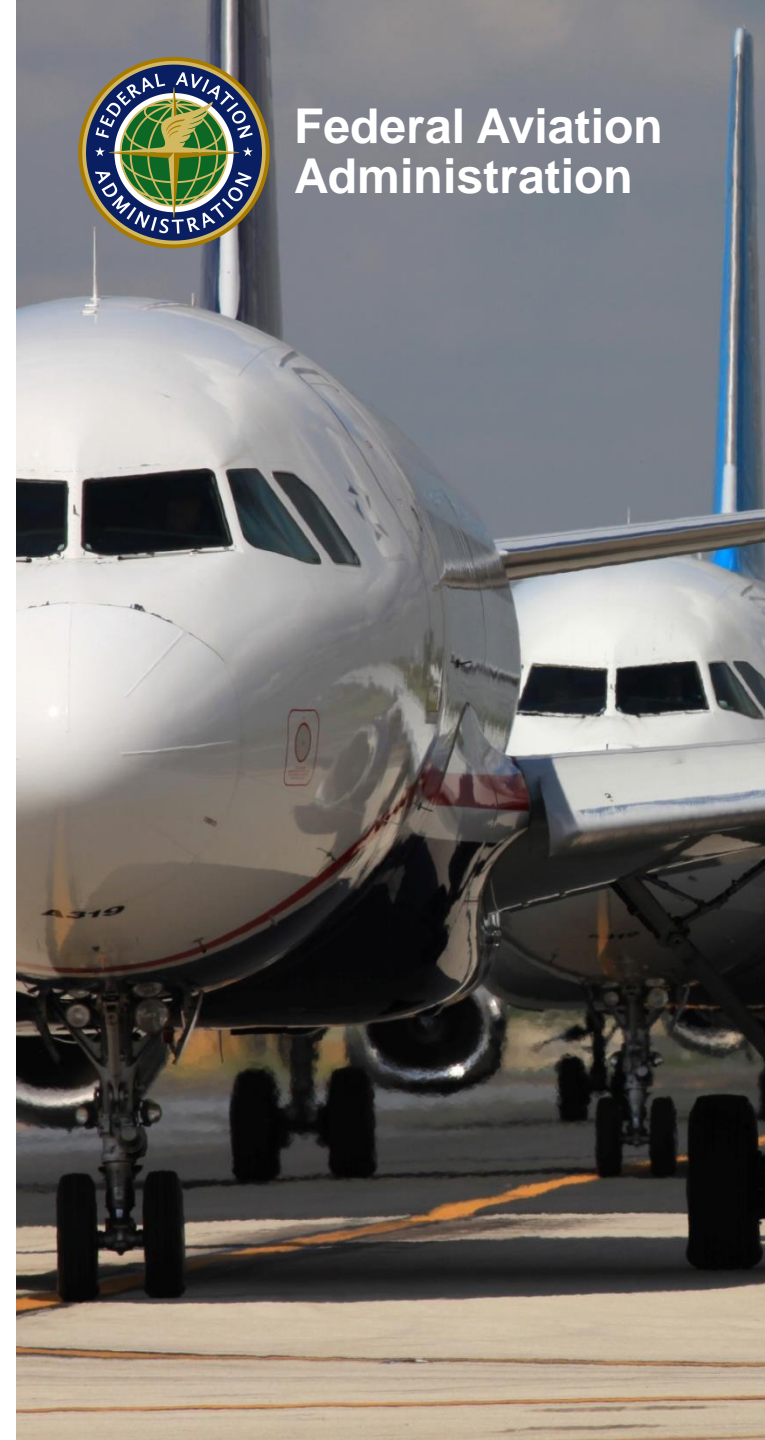
**Presented to:** ALACPA 2016

**By:** Jeffrey S. Gagnon

**Date:** 1 December 2016



Federal Aviation  
Administration





FAA PAVEAIR

Please choose a database

## Welcome to FAA PAVEAIR

FAA PAVEAIR is a public, web-based application designed to assist organizations in the evaluation, management, and maintenance of their pavement networks. PAVEAIR is designed to fulfill the requirements of an Airport Pavement Management System as identified in Advisory Circular (AC) 150.5380-7A.

The FAA is pleased to announce the release of FAA PAVEAIR v2.0. This version includes several important new features, such as: an updated M&R module, Life Cycle Cost Analysis (LCCA) module, and MicroPAVER e65 support.

Details on the improvements made to FAA PAVEAIR are available in the [Change Log](#).

For news and upcoming events, please visit the [News and Events](#) page.

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### Databases

Use the "Select a Database" button below to select a database. You will need to login to access your user databases. Public databases are read-only.

FAA PAVEAIR Version 2.5.0 build 2013.09.20 - [View Change Log](#)

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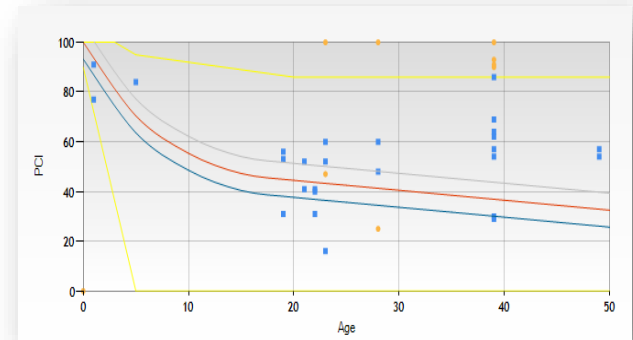


# FAA PAVEAIR Status

- **2016 Visits: Approximately 450,000**
- **Databases Created since release: 772**
- **Registered Users since release: 1956**



# Prediction Modeling



- **Assign pavement sections with similar construction and traffic patterns into a family model**
- **Plot PCI deterioration curve**
- **Prediction Modeling Library – On going**
- **Support multiple databases – finished**
- **Update the curve fitting algorithm – finished**
- **Create an algorithm to calculate Critical PCI – ongoing**
- **Create a Family Assignment Tool - ongoing**

# Feature Improvements

- **Migrate the Life Cycle Cost Analysis to a web-based environment.**
- **Update Inspection: Improved the keyboard-only entry of data.**
- **Users should be able to easily see how many inspections were performed and the data from each.**
- **Provide compatibility with e70 files - Ongoing**



# Climate Module and Traffic Module

- Investigate adding a Traffic and Climate Module
- Currently FAA PAVEAIR uses Distresses for PCI calculation, Prediction, and M&R
- Distresses are caused by Climate and/or Traffic, but Climate and Traffic data is not used in PCI, Prediction and M&R
- Investigate feasibility of directly using Traffic and Climate data in PAVEAIR calculations
- Traffic feasibility analysis is done
- Next step is to program a traffic module



# LCCA Review



## LCCA: A REVIEW AND CRITIQUE

by

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CMS Engineering Group

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Consultant

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Report 2601  
Project 2601

Performed in cooperation with the  
SRA International  
and the  
Federal Aviation Administration

November 2013

CMS Engineering Group  
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Final Report

AATP 06-06

## LIFE CYCLE COST ANALYSIS FOR AIRPORT PAVEMENTS

Prepared For:



Airfield Asphalt Pavement Technology Program (AATP)

277 Technology Parkway  
Auburn, AL 36830

Prepared By:



Applied Research Associates, Inc.  
100 Trade Centre Drive, Suite 200  
Champaign, IL 61820

January 2011

# Improve Life Cycle Cost Analysis

- **Review of FAA PAVEAIR / AirCost by a Pavement Engineer and Engineering Economists – completed**
- **Elaborate on key elements of LCCA for both asphalt and concrete paving materials**
- **Comparison with other LCCA programs / algorithms - completed**



# Improve Life Cycle Cost Analysis

- **Elaborate on issues, differences, and problems / deficiencies – completed**
- **Report of findings and proposal for further development – completed**



# Add Materials, Construction, and Cost Functions to FAA PAVEAIR

- **Collect airport pavement inventory, thicknesses, inspection, and work history data – more databases to be acquired.**
- **Also collect material type, material unit costs, M & R strategies, and traffic and climate considerations.**
- **The intent is to create and populate a database repository of US airport pavements.**

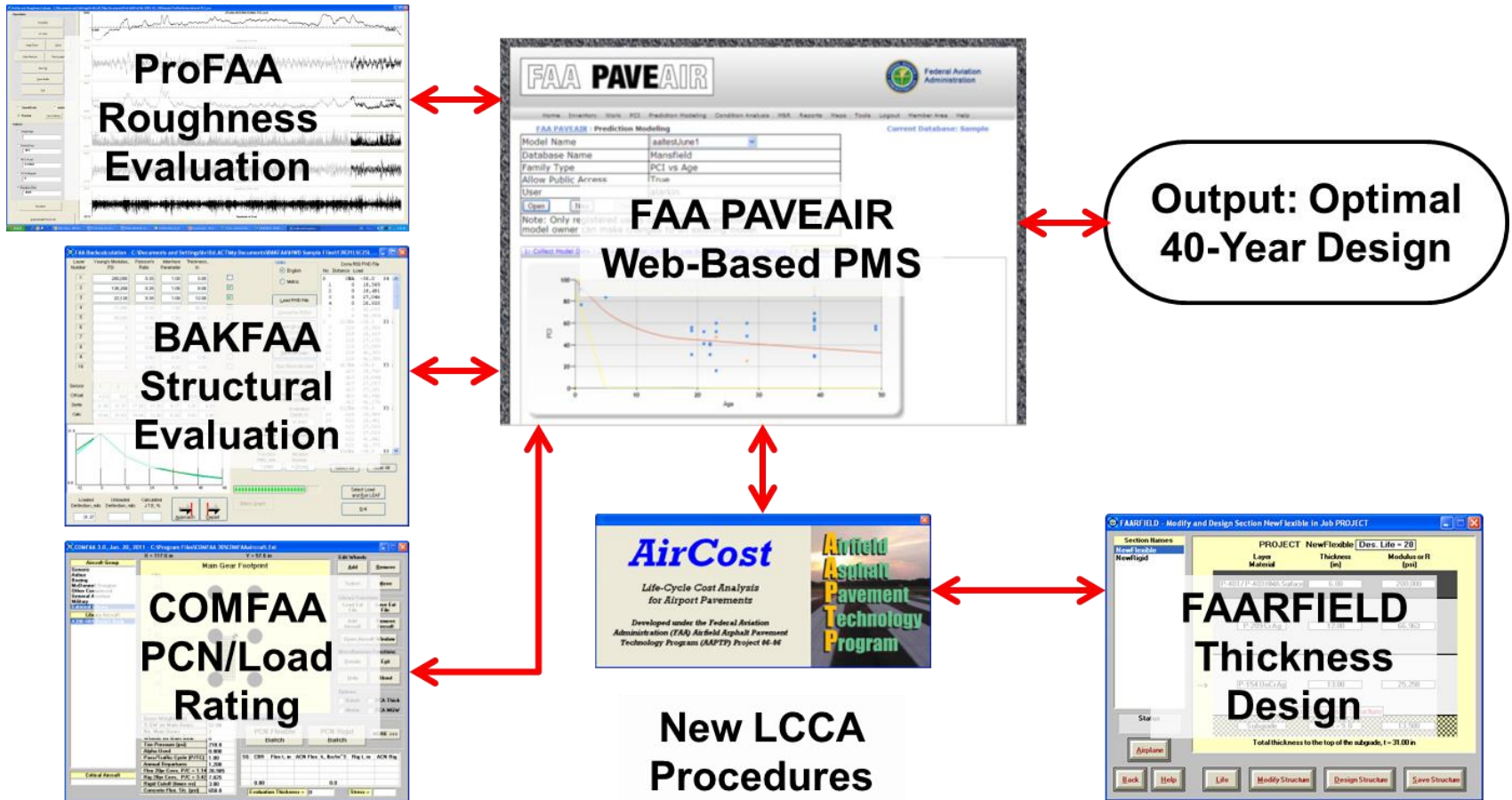


# Add Materials, Construction, and Cost Functions to FAA PAVEAIR

- **In conjunction with the traffic and climate feasibility studies, the data repository will allow users to create pavement families for Prediction Modeling.**
- **Follow on work will include design of Data Warehouses for data reporting and data mining and analysis.**



# FAA Software Integration



# Proposed FAA Software Integration

- **Software programs to be integrated:**
  - PAVEAIR with Life Cycle Cost Analysis (LCCA)
  - COMFAA (ACN/PCN Determination)
  - FAARFIELD (Pavement Thickness Design)
  - ProFAA (Airport Pavement Roughness)
  - BAKFAA (Pavement Structural Evaluation)
  - ProGroove (Pavement Groove Evaluation)



# Pavement Software Conversions

- **Upgrade Visual Basic (VB6) to more current Windows Presentation Foundation (WPF)**
- **Ensure compatibility with latest Microsoft Windows OS**
- **All FAA applications to be run using the same technology**
- **Prepare for future data sharing between applications**
- **All source code under source control**
- **Change logs**



# Software Conversion Status

- **All programs have been converted.**
  - BAKFAA - converted
  - FAARFIELD - converted
  - FEAFAA - converted
  - ProGroove - converted
  - A WPF version of ProFAA already exists
  - Evaluate differences between VB6 version and WPF version - ongoing



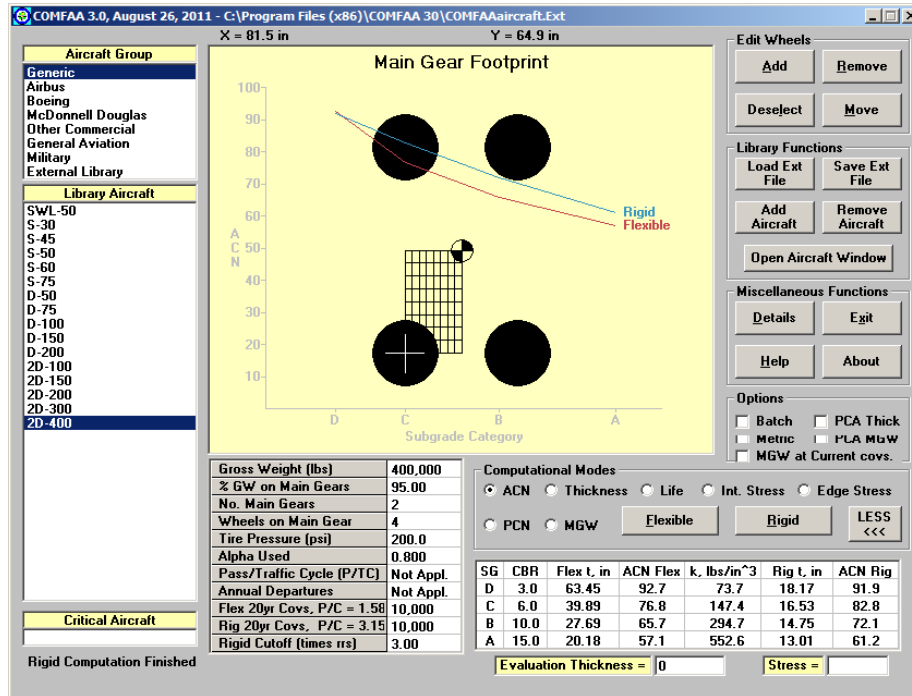
# Software Conversion Status

- Testing of the converted programs is ongoing by CSRA International.
- Pending testing completion and acceptance by the FAA, determine the best method to integrate the programs.

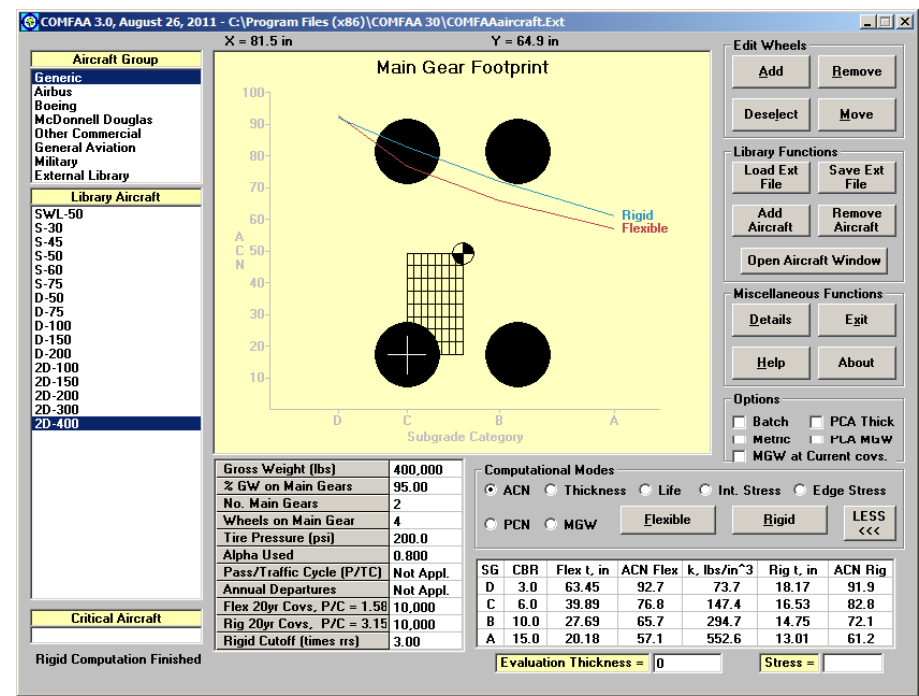


# COMFAA Before and After Results

## COMFAA VB6



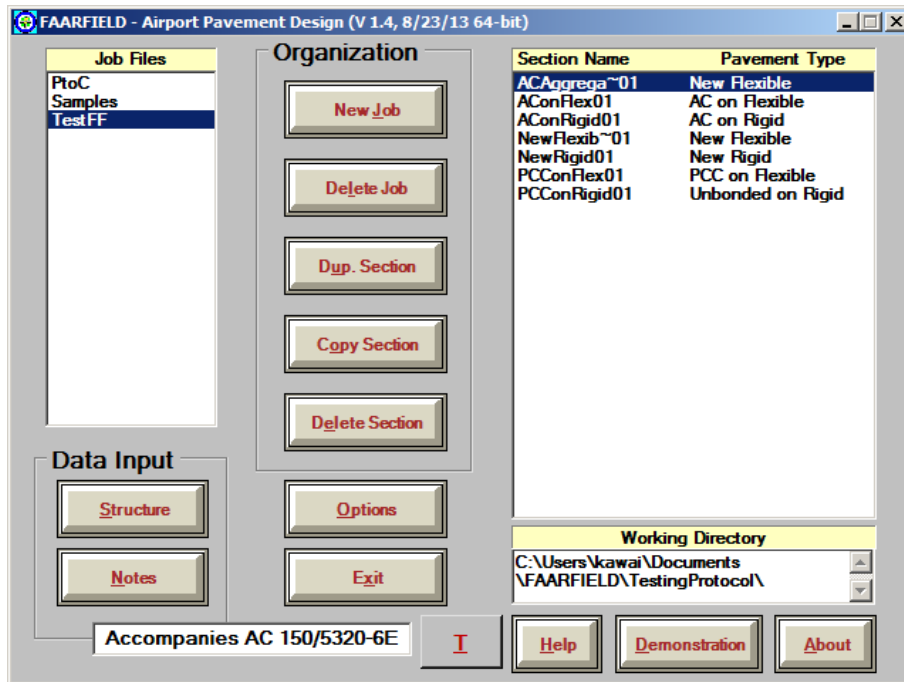
## COMFAA WPF



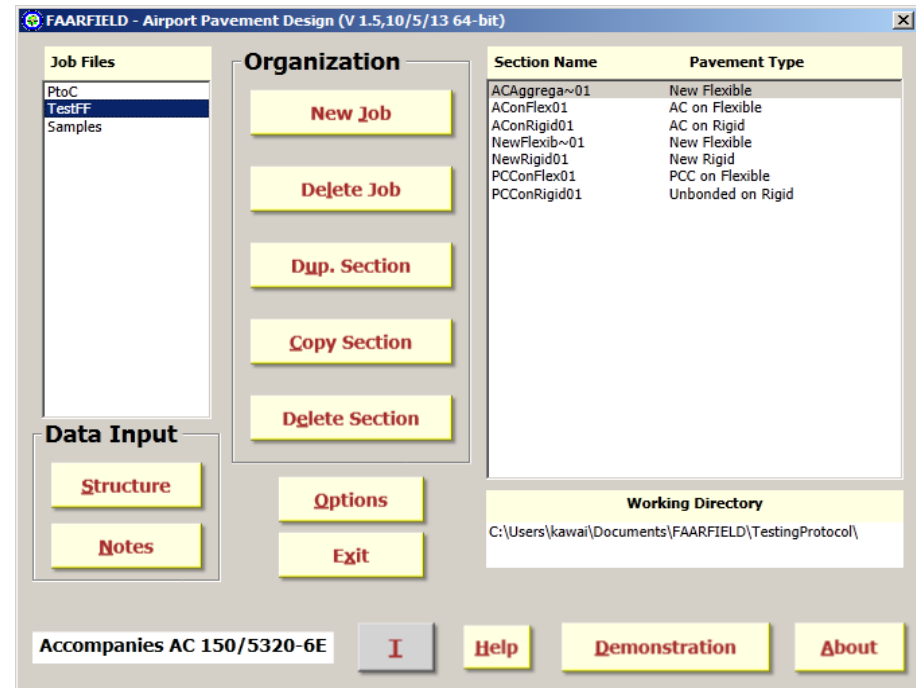
- Fonts, button design, spacing, shading slightly different
- Calculated results are the same

# FAARFIELD Before and After Results

## FAARFIELD VB2008



## FAARFIELD WPF



- Fonts, button design, spacing, shading slightly different
- Calculated results the same

# Field Capable Handheld Devices



**Motion F5t Rugged  
Tablet PC**

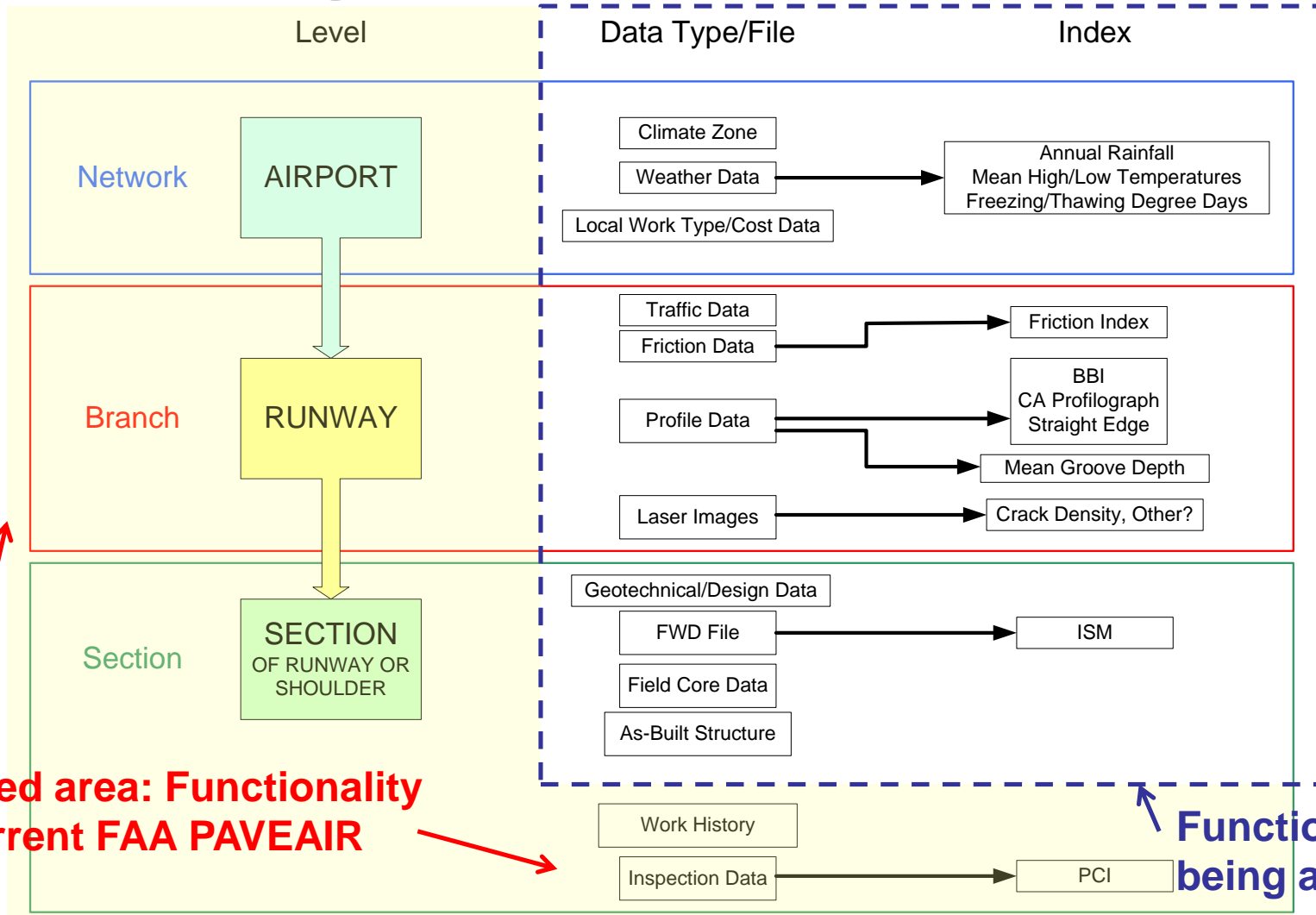


**Trimble JUNO 3 Series**



**Trimble GeoExplorer 6000**

# PA40 Organization Concept



**Shaded area: Functionality in current FAA PAVEAIR**

**Functionality being added**





# THANK YOU

