

Meeting Minutes: TPF-5 (334) Veta Enhancements & Technology Exchange (Meeting No. 6)

Date: 07/27/17
 Minutes prepared by: Richard Duval & Rebecca Embacher
 Location: WebEx

Attendance

Pooled Fund State Contacts:

Participated	State	State Contact
<input checked="" type="checkbox"/>	Alaska	Richard Giessel
<input type="checkbox"/>	California	Ebi Fini
<input checked="" type="checkbox"/>	California	Chuck Suszko
<input checked="" type="checkbox"/>	Connecticut	Dave Howley
<input checked="" type="checkbox"/>	Georgia	John Martin
<input checked="" type="checkbox"/>	Maine	Ulrich Amoussou-Guenou
<input type="checkbox"/>	Maine	Dale Peabody
<input type="checkbox"/>	Maine	Casey Nash
<input checked="" type="checkbox"/>	Minnesota	Rebecca Embacher
<input checked="" type="checkbox"/>	Minnesota	Curt Turgeon
<input checked="" type="checkbox"/>	Mississippi	Alex Middleton
<input type="checkbox"/>	Missouri	Bill Stone
<input type="checkbox"/>	Missouri	Dan Oesch
<input checked="" type="checkbox"/>	New York	Zoeb Zavery
<input type="checkbox"/>	Oregon	Chris Harris
<input checked="" type="checkbox"/>	Oregon	Larry Illg
<input checked="" type="checkbox"/>	Oregon	Mike Stennett
<input checked="" type="checkbox"/>	Pennsylvania	Dan Clark
<input type="checkbox"/>	Pennsylvania	Sheri Little
<input checked="" type="checkbox"/>	Tennessee	Matt Chandler (non-voting member)
<input type="checkbox"/>	Texas	Jimmy Si (non-voting member)

FHWA:

Participated	Contact
<input checked="" type="checkbox"/>	Michael Arasteh
<input checked="" type="checkbox"/>	Steven Cooper
<input type="checkbox"/>	Richard Duval
<input checked="" type="checkbox"/>	Kevin Kliethermes
<input type="checkbox"/>	Antonio Nieves

The Transtec Group:

Participated	Contact
<input type="checkbox"/>	George Chang
<input checked="" type="checkbox"/>	Jason Dick

Decisions Made

- Decision: First round of task selections for Phase II completed.

Action items

- J. Dick | update budget for tasks selected from the meeting.
- Embacher | Send updated tasks out for review and priority ranking after budget updates.
- Fini | Send temperature specification requirements (both method specification and QC/QA).
- Embacher | Run Caltrans spec. through current version of Veta to assist with determination of enhancements required to support these specifications. Conference call with Caltrans to finalized enhancement features needed. Send information to J. Dick for updated quote.

Agenda

- IICTG Workshop | TPF-5 (334) Meeting
- Phase I Contract Update
- Phase II Scope of Work
- Round Robin

Next Meeting

Date: September 25, 2017

Time: 9AM-2PM

Location: MnROAD Research Facility and WebEx

Agenda items: Prepare for IC-TP ETG Discussion Items (Standardized Lot Naming Convention, Standardized Intelligent Construction Data Format), Working Meeting (How to better us IC and PMTP data to identify workmanship issues)

Meeting Notes

IICTG & TPF-5 (334) Travel Arrangements

Embacher reviewed travel needs for IICTG and TPF-5 (334) pooled fund meeting. See slides for further details.

Pooled Fund Participants

Alaska and New York joined pooled fund. Waiting on transfer of funds to pooled fund.

Phase I Update

J. Dick provided update on Phase I.

Customization of reports work moved to end of contract. However, added feature for the subplot reports. User can select detailed or full report.

Manual Download of Data directly from remote servers (Trimble, Moba, TopCon) – Currently, beta testing TopCon and Moba data imports. Hope to have complete within 2 weeks. Will release this version to a couple of states to beta test before making it available on the website. Trimble data imports will be completed next.

TopCon – 100% of data for each day is downloaded and will replace existing daily download (when partial data set has been downloaded).

Moba – Need to determine effects of partial downloads of *.paveproj files.

Location Filters (use of line-work to draw additional lines for filtering) – task to be completed after manual download of data (~ November / December).

Re-calculation of pass counts - is complete. Feature to be released in Veta 4.3 (August).

Map-based data (viewing values for data in a given region) – is complete. Feature to be released in Veta 4.3 (August).

Tabular listing of filters & settings – feature to be started early 2018.

QC Charts – feature to be started early 2018.

Phase II – Scope of Work

About \$170,000 available for phase II work. Discussed tasks that contained the most states selecting them as a top 10 priority. See Table 1 listing below of priority listing.

Participants selected tasks to move forward. The number of tasks most likely will exceed the available budget, and therefore, tasks will need to be re-ranked for final inclusion into Phase II.

Roller impacts per foot, not in top priorities, however, everyone agreed that it should be included in Phase II work due to the benefits of these values.

See Table 2 below for first round selection of phase II tasks.

Round Robin Update

CA – moving forward with techn., 12 projects underway; 6 to be delivered soon.

CT – 4 projects in 2017; moving forward with techn.

GA – Currently, no projects; using IC on grading applications and not HMA.

ME – Learning process; 2 projects in 2017 (Aug/Sept) on HMA; includes IC, PMTP and RDM.

NY – Using pilot specification requiring solely the use and collection of data; moving forward slowly to allow for training and understanding of techn.

OR – Currently, at the 3rd iteration of the specification; techn. Required on projects that are 35,000 tons or greater. Plan to lower minimum quantity requirement in the future. Projects include IC and PMTP.

TN – 2 trial projects completed; 1 large project during 2017; plan to use as QC tool only.

FHWA – Working on gap in funding.

Table 1. Number of Votes that are Top 10 Priorities for each Task.				
Category	Task No.	Task Description	Task Cost	Count Top 10
Data Management	A-01	Support for import of ground penetrating radar (GPR) data	\$ 38,390.52	2
Data Management	A-02	Support for import, viewing, and correlation analysis of ProVAL localized roughness results	\$ 36,818.51	3
Data Management	A-03	Support import of data files in delimited text file format	\$ 12,148.88	0
Data Management	A-04	Add ability to store and export the original KMZ files. Support the Shape file format.	\$ 26,105.76	2
Data Management	A-05	Enhance import to: allow compressed files; detect duplicate files; detect associated coordinate zones; save recent settings; apply local adjustment factors (multipliers and offsets) for coordinates.	\$ 14,691.88	1
Data Management	A-06	Allow different coordinate system for each data file in a Veta project.	\$ 17,738.88	1
Data Management	A-07	Allow files from different vendors to be loaded into a single project; Allow creation of projects with no data (allows alignment to be added before data exists)	\$ 50,824.88	4
Data Management	A-08	Calculate speed for PAVE-IR data using GPS.	\$ 7,607.72	3
Data Management	A-09	Determine route for data. Required for distance-based features of IC data and other tasks.	\$ 4,053.19	0
Data Management	A-10	Add ability to import files that use coordinate systems defined by EPSG, ESRI, or equation parameters.	\$ 12,148.88	0
Data Management	A-13	Import and export of data using the standard file format	\$ 28,606.10	2
Data Management	A-14	Ability to lock or create read-only files to prevent accidental changes that affect analysis.	\$ 14,687.44	4
Data Management	A-15	Drafting, editing, publication, marketing (?) of standard file format	\$ 46,953.60	0

Table 1. Number of Votes that are Top 10 Priorities for each Task.				
Category	Task No.	Task Description	Task Cost	Count Top 10
Mapping	B-01	Display multiple maps on the same screen and a mini overview map.	\$ 22,244.44	10
Mapping	B-02	Add option for aerial map without labels (more if available). Show mouse pointer position in multiple coordinate systems. Zoom to alignment.	\$ 9,121.44	2
Mapping	B-03	Add support for historical, current, and forecasted weather maps such as radar and air temperatures.	\$ 14,339.88	0
Mapping	B-04	Add the ability to change displayed coordinate system zone (county, state, etc)	\$ 3,559.88	2
Mapping	B-05	Add a capability to play back roller data on maps	\$ 18,090.88	4
Mapping	B-06	Advanced map data tool (map clicks can show additional data such as event markers, charts, etc.)	\$ 11,388.44	2
Mapping	B-08	Allow user to zoom to data meeting certain requirements; allow user to select next to zoom to next location. Areas of interest may be where there is missing data, breakdown roller compaction mode is static, severe thermal segregation sublots, etc.)	\$ 14,691.88	0
Mapping	B-09	Enhance the ruler to measure multiple segment lengths. Show running length as cursor is moved.	\$ 2,674.22	3
Mapping	B-10	Add options to zoom in when moving to the first or last points	\$ -	0
Mapping	B-11	Include options to show paving directions and stations on map.	\$ 17,910.44	0
Filtering	C-01	Add ability to view location filter and exclusions at the same time. Remove restriction that an exclusion must be entirely inside a location filter. Allow overlapping exclusions. Delete multiple rows in location filter at once.	\$ 17,164.76	1
Filtering	C-02	Sublot Filters: Lock filters to ensure that the user does not unassociate them with the given filter group. Still allow user to delete subplot filter if needed.	\$ -	3
Filtering	C-03	Filter Group Manager - add ability for each state to create project information lists (i.e., route system, materials, centerline offsets) such that the lists work for each state. Lists can be exported/imported.	\$ 19,484.66	5
Spot Tests	D-01	Spot tests manager (add/remove/change test types, define units, include specification requirements, and define legend for spot test values, import/export test types)	\$ 20,937.88	10
Spot Tests	D-02	Enhance spot test inputs (make timestamp optional, add comments, select for QC or QA) and usability (remove spot test data points via map, show values on map). Separate analysis for QC and QA tests. Import wizard (select columns and units)	\$ 37,228.88	6

Table 1. Number of Votes that are Top 10 Priorities for each Task.				
Category	Task No.	Task Description	Task Cost	Count Top 10
Analyses	E-01	Specification: Import and export analysis specification; Calculate differential, ranges, and % of data within ranges for all data; % Coverage and actual area of failed area (spec targets).	\$ 20,733.52	4
Analyses	E-02	Correlate spot tests to all data types of in IC and thermal profile data. Correlate a data to one another types within IC and thermal profile data. Report spot test values with respect to all correlated data types in one table.	\$ 56,356.60	4
Analyses	E-03	Add smart detection of data abnormalities to improve data correlation (Spot test correlation. Show original and autocorrected chart lines, list excluded points); Allow user to swap chart axes; Allow selection of regression equations (linear, power, and polynomial) and changing of the fit parameters; Smart filtering of spot tests (exclude test points that don't match the location filters and tests locations that don't have sufficient data).	\$ 45,398.80	2
Analyses	E-04	Calculate percent changes in mean ICMVs between passes and between layers in IC data.	\$ 13,213.76	2
Analyses	E-05	Calculate changes (drops) in mean temperatures between passes in IC data.	\$ 13,213.76	1
Analyses	E-06	Add IC spatial analyses results (coefficient of variation, semivariogram parameters) as indicators of Pass/Fail in specifications	\$ 53,478.40	1
Analyses	E-07	Use density and temperature gun data from spot tests after each roller pass to produce compaction curves (density growth, temperature drops, and ICMV) and their correlation at given spot locations.	\$ 25,318.40	6
Analyses	E-08	Differentials Enhancements: Plot differential versus distance with horizontal lines signifying the values for the moderate and severe categories. Include a pie chart for the overall, temperature and differential page illustrating low, moderate and high thermal segregation.	\$ 1,226.72	1
Analyses	E-10	Add ability to cancel and minimize analysis. (minimize analysis - phase !?)	\$ 881.22	1
Analyses	E-11	Provide statistics on the underlying data for spot tests. (part of search??)	\$ -	1
Analyses	E-12	Provider coverage stats for each subplot	\$ 6,074.44	3
Analyses	E-13	Save analysis results and select different analyses/results in the software.	\$ -	1
Analyses	E-14	Calculate impacts per foot based on vibratory frequency and roller speed.	\$ -	2
Analyses	E-15	Adjustment to calculations of coverage for overlapping data / operation filters.	\$ -	2
Analyses	E-16	Thermal Sublot Lengths with Exclusion Areas - length based on data and not subplot lengths	\$ 1,865.72	0
Reporting	F-01	Reporting: Print maps; print maps at a defined zoom/distance scale; Print map for each subplot analysis; Identify subplot table cells that passed/failed; sign PDF reports with Veta certificates.	\$ 29,383.76	0

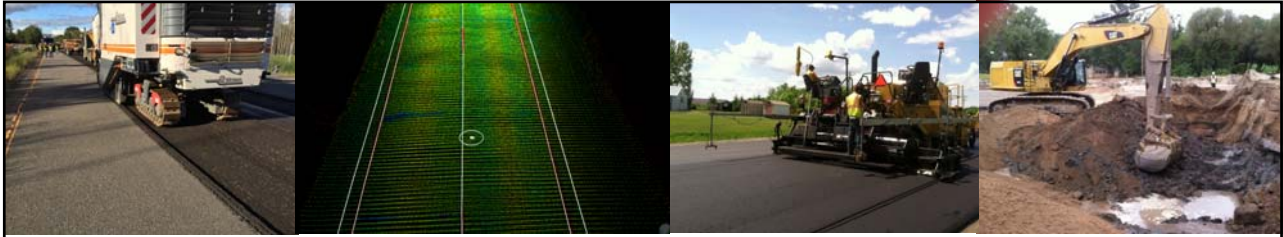
Table 1. Number of Votes that are Top 10 Priorities for each Task.				
Category	Task No.	Task Description	Task Cost	Count Top 10
Reporting	F-02	Thermal profiles: Improve paver stop display (handle overlapping stops, ensure stops align with data to improve readability)	\$ 5,234.47	2
Reporting	F-03	Thermal profile: Display synced mouse tracker across the 3 thermal profile charts; Optimize thermal profile drawing to adapt better (short profiles, wide screens); Report thermal profile length minus any black areas (i.e., missing data, no GPS coordinates, etc.)	\$ 21,790.26	1
Reporting	F-04	Provide "dash board type" of summary report	\$ 23,452.22	2
Reporting	F-05	Add line chart of coverage vs. operation filter.	\$ 881.22	1
Misc.	G-01	Data manager - mixed unit systems, histogram and chart limits, legend definition, decimal precision. Legend improvements (option for smooth coloring, machine-specific, foreground color auto contrast with background color, add color for "less than last value", ability to revert to defaults.) Support import/export of data manager settings.	\$ 28,096.76	0
Misc.	G-02	Implement Undo system (undelete sublots, filters)	\$ 16,854.44	1
Misc.	G-03	Add coordinate conversion calculator tool.	\$ 18,451.76	2
Misc.	G-04	Develop a feature to facilitate onsite GPS verification tests (conversion of coordinate system if needed) according to the FHWA/AASHTO procedure	\$ 18,724.76	2
Misc.	G-05	Update software screens to provide simplification, support high resolution monitors, and update to more recent programming language.	\$ 99,507.20	0
Misc.	G-06	Technical support to Pooled Fund States and Veta fixes	\$ 221,560.00	4
Misc.	G-07	Update user's guide. Ensure readme / definitions are included in the user guide (e.g., definitions of lot, subplot, filter group, operation filter, override filter, semi-variogram, CoV, editor, etc.)	\$ 3,616.97	0
Misc.	G-08	Create "how to" guide	\$ 21,059.88	3
Misc.	G-09	Create a notes menu on the top tool bar to allow for project notes to be added (if possible could snapshots be added also?). This would be more extensive than that feature currently in properties.	\$ 11,388.44	2
Misc.	G-10	Develop small installation patches that don't require elevated privileges.	\$ 1,596.22	0
Misc.	G-11	Alert the user when a software update is available.	\$ 1,689.72	0
Misc.	G-12	Preserve the software state (views, selected items, sizes, etc)	\$ -	0
Misc.	G-13	Add a journal feature that allows for notes, images, attachments, etc. (same as G-09?)	\$ -	1

Table 1. Number of Votes that are Top 10 Priorities for each Task.				
Category	Task No.	Task Description	Task Cost	Count Top 10
Vendor Spec.	H-02	Support for MDP and CMV+MDP dual measurements	\$ 9,121.44	0

Table 2. First Round Selection of Tasks for Phase II.			
Category	Task No.	Task Description	Task Cost
Data Management	A-02	Support for import, viewing, and correlation analysis of ProVAL localized roughness results	\$ 36,818.51
Data Management	A-13	Import and export of data using the standard file format	\$ 28,606.10
Mapping	B-01	Display multiple maps on the same screen and a mini overview map.	\$ 22,244.44
Mapping	B-05	Add a capability to play back roller data on maps	\$ 18,090.88
Mapping	B-09	Enhance the ruler to measure multiple segment lengths. Show running length as cursor is moved.	\$ 2,674.22
Mapping	B-12	Phase I: Load different types of data into one Veta project to allow for multiple map viewing (e.g., IC, PMTP and Ride data in one Veta project).	
Filtering	C-02	Sublot Filters: Lock filters to ensure that the user does not unassociate them with the given filter group. Still allow user to delete subplot filter if needed.	
Filtering	C-03	Filter Group Manager - add ability for each state to create project information lists (i.e., route system, materials, centerline offsets) such that the lists work for each state. Lists can be exported/imported.	\$ 19,484.66
Spot Tests	D-01 / D-02	Add legend (points on map colored respectively), allow for import of data with no time stamps, create an import wizard	
Analyses	E-07	Use density and temperature gun data from spot tests after each roller pass to produce compaction curves (density growth, temperature drops, and ICMV) and their correlation at given spot locations.	Note 1

Table 2. First Round Selection of Tasks for Phase II.			
Category	Task No.	Task Description	Task Cost
Analyses	E-14	Calculate impacts per foot based on vibratory frequency and roller speed.	
Analyses	E-17	Phase II: Allow for correlations between different types of data (e.g., paver stops vs. ALR, pass count vs. roller speed)	
Bug Fixes		Bug Fixes	

Note 1: This task is to be rewritten to address the needs of temperature based specifications. Exact details of task to be determined by pooled fund upon review of Caltrans specification(s).



TPF-5 (334) WebEx Meeting #6

Rebecca Embacher | Advanced Materials and Technology Engineer

July 27, 2017 | TPF-5 (334) WebEx Meeting



AMT Website | <http://www.dot.state.mn.us/materials/amt/index.html>



Note Taker

Notes on discussions outside of slides (will submit slides with notes)
Notes are submitted to Pooled Fund

Meeting Agenda

- IICTG Workshop | TPF-5 (334) Meeting
- Phase I Contract Update
- Phase II Scope of Work
- Updates



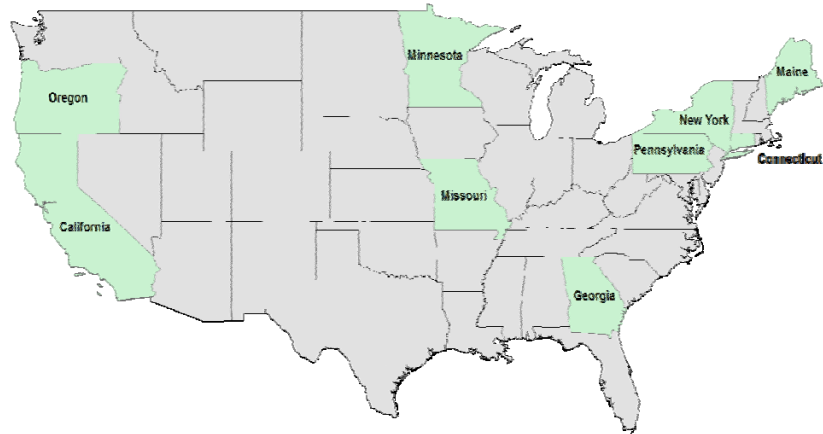
Phase I - Update

Current Pooled Fund Participants



Non-Voting Members

- Tennessee
- Texas



IICTG Workshop | TPF-5 (334) Meeting

Travel Arrangements Pooled Fund Participants

- Out-of-state travel approved by Pooled Fund
 - OR – just added | still need approval
- Purchase Orders
 - IICTG Workshop Registration
 - Please send me ASAP snapshot of registration information
 - TPF-5 (334) Meeting – Lunch
- Hotel
 - Make Reservations | Reimburse w/ other expenses
- Flight
 - Call MnDOT Aeronautics Dept | [651-234-7222](tel:651-234-7222)

IICTG Conference	
Registrant Information	
First Name:	<input type="text"/>
Last Name:	<input type="text"/>
Title:	<input type="text"/>
Agency/Company:	<input type="text"/>
Email:	<input type="text"/>
Phone:	<input type="text"/>
Address	
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City:	<input type="text"/>
State/Province:	<input type="text" value="-Select-"/>
Postal Code:	<input type="text"/>

TPF-5 (334) Meeting

- WebEx Meeting | MnROAD Facility
- Transportation by MnDOT
 - 8:00AM Departure Time from Depot
 - ~4:00PM Departure Time from MnROAD
 - ~ 45 minute drive (w/o traffic congestion)



Agenda Items

- Prepare for IC-TP ETG Discussion Items | **Tuesday, 9/26/17 (8AM-12PM)**
 - Standardized Lot Naming Convention
 - Standardized Intelligent Construction Data Format
- Working Meeting
 - “How to Better Use IC and PMTP Data to Identify Workmanship Issues”
- Any modifications to agenda?

MnROAD Tour

- After Pooled Fund Meeting (2PM-4PM)
- Register: <http://www.dot.state.mn.us/mnroad/touriictg.html>





Phase II Scope of Work



Updates



Thank you again!



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651-366-5525



AMT Website | <http://www.dot.state.mn.us/materials/amt/index.html>