

Meeting Notes

Portland Regional Signal System

User Needs Meeting #1

Wednesday, January 30, 2019

9:00 a.m. – 11:00 a.m.

DKS Large Conference Room

Portland, OR

| Name | Agency | Name | Agency |
|----------------------|------------------|-----------------|-------------------|
| Willie Rotich | PBOT | Carl Olson | Clackamas County |
| Jason McRobbie | PBOT | John Fasana | Washington County |
| Peter Koonce | PBOT | Jim Gelhar | Gresham |
| Adam Moore | PBOT | Tina Nguyen | Beaverton |
| April Bacigalupi | PBOT | Jabra Khasho | Beaverton |
| Nathaniel Price | FHWA | AJ O'Connor | TriMet |
| Caleb Winter | Metro | Dennis Mitchell | DKS |
| Tiffany Slauter | ODOT | Pam O'Brien | DKS |
| Ioana Cosma | ODOT | Maggie Lin | DKS |
| Bikram Raghubansh | Clackamas County | Jim Peters | DKS |
| On the phone: | | | |
| Trung Vo | PBOT | Stacy Shetler | Washington County |

Managing controller databases

- Need an editor
- Need to access different versions of timings regardless of communications
- Need to transfer the versions between different IPs for test controllers
- Need to transfer databases between central and local
- Need to upload/download all or parts of the database
- Need to provide confirmation before downloading database to controller
- Need to compare the timing sheets/parameters between two different databases
- Need to track history of changes - all parameters, by who
 - Must track changes for x timeframe. What is the public records request timeframe? 3 years on a TORT claim
 - User must be able to filter the changes for a time period, by user, etc.
- Need for a database template? Nice, but if you can create multiple versions you can create a template. Don't need the vendor to give a template. Want ability to create your own template
- Need to copy all or parts of one database to another.
- Need to export to an external file

- Need to know which database is running the field (clear label)
- Need to compare to what the central thinks it should be
 - This should be automatic
 - The user should be able to schedule it
- Need fundamental timing checks
 - Validate the calculations of splits vs. cycle length/ring
 - Phase order
 - Coordination phases
- Transfer to Synchro (UTDF) - Nice to have. (Don't trust it. Don't use it much.)
Would be nice if it worked seamlessly. Import from and Export to would be helpful.
- Nice to flag tables that are non-default.
- Need to send full database of the timings (troubleshooting/testing).
- Nice to export to a CSV file, not just a PDF.
- Timing sheets
 - Need to print and put a copy in the cabinet
 - An ODOT manual says we need a copy of the timing separate from the controller in the cabinet (a USB may count as a copy of the timing) - Tiffany says ODOT has this comment.
 - Public requests for timing plans. They have to provide one, make sure it's the most recent and what's in the controller
 - Also get requests from accidents for a year ago. Need to print what was running at that time
 - Would like to have a menu driven print out (basic to complex) so different formats can be printed depending on the audience.
 - Trafficware has four different timing sheets to print (2 page to 50 pages long). Nice to have a custom template that gives the key files.
 - Critical to have a timing sheet with every signal timing parameter since this is a record of what's in the controller for legal reasons
- Search for intersections - "data dictionary with meta data"
 - by name of intersection
 - by intersection number
 - by jurisdiction
 - by cities
 - Need alternative ways to search
 - Need to filter down to a corridor or intersection to pull all of those timesheets to output multiple intersection timing sheets with one click for times when a Consultant requests timing data
- Corridor
 - Nice to download changes to multiple intersections at once. Strong "wish list item"
 - Open databases for multiple intersections at the same time
- User Management
 - Need to log who made what changes and when
 - Need to have only one person able to edit the timing sheet at once

- Need to see who is accessing database
 - Need access to user manual from dashboard
- Minimum number of intersections is XX

Monitoring the Traffic Signal Network

- Need web-based map accessible from any browser, not just Explorer
- Need to zoom in and see more detail on the map/intersection (drill in and see more detail):
 - main map - coord status
 - zoom in to intersection level
 - zoom in to individual movements
- Need to show a table of comm status (number on line, off line, etc)
- Need to show inputs and outputs at different levels and one window that shows both.
- Real-time times-pace diagram
 - should be more automatic. (they have to set it up now with speed, and other link information)
 - ideally grab intersections on a map and have it populate the time-space diagram
 - would be nice to see detector inputs on TSD
- Need to show inputs and outputs that are active
 - Vehicle calls
 - pedestrian calls
 - priority (truck and transit)
 - preemption too.
- Need link to plans, cabinet prints, other files
- Need select the intersection database from the map
- Need to show detection failures on the map.
- Need main map to show different colors for status so they quickly go to failures
- Need to show map configurable by jurisdiction
- Nice to have but not a big need to view the front panel if you can manipulate it.
- Alerts/logs (define/expand)
- Alerts need to be in different formats (text and/or email)
- Need to configure alert by type/recipient/time of day.

Controlling Intersection Operation

- Need open interfaces to other IP addressable devices such as radar, phase selectors, video detection, etc.
- Need to support centralized TSP management system (interface from a TSP central server) - AJ suggests we have performance specification to how quickly the system responds to the change.
- Need to implement previously programmed plans (i.e. incident plan) for multiple intersections
- On-street masters (Not a strong need)

- Note: Mall signals act like a local and master for supporting the peer-to-peer communications to traffic signals (but not local masters as in closed loop system).
- Traffic responsive? Nice to have it the option. Limited use in the City/partner agencies.
- Traffic adaptive?
 - If there is a module they can provide, nice to have.
 - Will it interface with the existing systems in the region? Nice to have
 - InSync
 - SynchroGreen
 - SCATS
 - MaxAdapt
 - Nice to view the status of an adaptive intersection
- Need to remotely place any input including pedestrian, bicycle, preemption calls.
 - Duration of time for how long call is active.
 - Should be an option to call a phase or an input
- Need to manually call in a plan with a time duration for when to expire.
- Nice to change max green or other local settings for a set duration of time.
- Need to combine commands in the scheduler to turn things on/off by time of day
- Need to download a real-time time sync immediately, not scheduled.
- Need to receive time inputs based on network time protocol (NTP)

Performance Monitoring/Measurement - (need to discuss further)

Consider moving the system alerts and logs to the monitoring category.

- Need to integrate Automated Traffic Signal Performance Measures (ATSPM) in the central system (Portland is currently using the UDOT source code for ATSPMs). Region prefers ATSPM in the same central system, NOT a separate system
- Need to have a “heat map” showing condition of metric (detail which metric)
- Need to create reports based on Purdue high resolution data (expand/define)
- Need to filter the alerts by intersections (no side street detection at one intersection may mean no traffic and at another intersection may mean detection issue)
- Need to interface to 3rd party network monitoring. (nice to have)
- Need central to interface to a camera and spin the camera to the location.
- Need to compare to historical to current conditions.
- Need big picture view and the fine detail view.

Reports (need more discussion):

- System logs
- System faults/alarms
- System alerts
- Need report that show status:
 - Status change
 - Coord changes (did the plan change when it should have)
 - Preempt status

- Need reports to be exportable to CSV (and other easy to use formats)
- Need split monitor report.
- Need TSP report
- Need log/report for FYA.
 - When it is on and off.
 - How long it delayed the turn on with gap dependent.
- Preemption and priority performance monitoring is weak in ATSPM. May need some Portland performance measures.
- Need reports that are easily configurable. Part of the workflow when you build an intersection that it also builds the MAP
- Nice to see the split monitor report over a user specified timeframe that is longer.
- Need automated and queried reports (user configurable)
- Need a feedback report showing logs and failures

Dashboards

- Nice to have a high-level dashboard.
- Nice to open API to another system that allows you to create other dashboards super easy and fast.
- Need to compare traffic signal performance.
- **Elastic search?** Produce dashboards on everything super fast and super easy.

Other System Interfaces

- Nice to have real-time traffic data from other sources.
- Nice to compare to congestion levels from 3rd party data
- Nice to have AVL from transit and emergency vehicle
- Nice to integrate with BT data.
- If there are certain systems that we need to link to, then we should be clear about this.
 - TripCheck integration
 - TriMet integration

System Access:

- Consultants
- Universities
- All agencies
- Challenge today: managing other cities today that want to see status of their intersections.
- Need to configure different users, hierarchy, and access rights.
- Need to support more users than just the operating agency.
- Nice to separate the upload function so someone can upload from field but can change.
- Should be able to see who is logged in.
- Nice to be able to chat with users who are logged in.
- Need to support thousands of intersections. Demonstrate they have been operating thousands of intersections so we know it has been tested.
- Need multiple users to access the system at the same time

- Need a time expiration for the user if no activity. Should provide a notification to the user if someone else has taken control away.

Comment: Need to list things TransSuite does that we like.

Use Cases:

- Add intersection
- Manage intersection
- Performance monitoring
- Maintenance vs. Operations
- Map view from main drilling down to an intersection
- Mail priority with the peer-to-peer communications
- Performance measuring...
 - Incident occurs, call in a pattern change, monitor performance. Did it do what I thought it would do.
 - More basic. I made a timing change and I want to understand how well it is performing or I want to know there was an incident so today is not the day to measure the difference from my change.
 - Could trigger different timing plans...
- Stuck data, not getting a call is a common troubleshooting call.
 - Bikram goes to NWS Central to see a heat map that shows where something was maxing out every time or user configurable threshold. Find the problem and then go to the TransSuite to change.
 - Also useful to compare to historical and what happened. Need bigger picture view and the fine detail view.
- When the server is going to be down, to notify everyone that is logged in

Next Steps:

- Come back to the user needs for other systems

Constraints

- Willie wants the new system to also talk to 170E with Wapiti
- Is there a way to get to only asking for 2070's with Voyage
- ODOT is moving to all ATC and can't have a 2070 in the field. Can the locals take those controllers? Do they even have the licenses to use the 2070s with Voyage.

Action:

- Each agency inventory their traffic signals. How many of each are still out there? What needs to be connected?