



February Meeting

2/9/2022

AGENDA

1. Announcements

2. Esri Update

- New Capabilities and Functionality Demos - Nathan Easley
- Supporting Linear Referencing Within Field Maps - Jeff Shaner

3. Open Discussion

**** Please mute phones!! ****

ANNOUNCEMENTS

- GIS-T: <https://gis-t.transportation.org/> - Registration now open!
- GeoNet - Become a part of the ESRI Community
- R&H in Pro Technical Workshop – Clive Reece
- Patrick's Future Support

Esri Updates

New Capabilities and Functionality Demos

Nathan Easley

Esri Updates

Supporting Linear Referencing Within Field Maps

Jeff Shaner

Open Discussion

RHUG Community

Upcoming Meetings / Contacts

Wednesday March 9th, 1:30-3pm

Contact Info:

Erin Lesh ealesh@ncdot.gov

Patrick Whiteford pwhiteford@azdot.gov

Ryan Koschatzky rjkoschatzky@ncdot.gov

Shaun Perfect sperfect@azdot.gov



Product Team Update RHUG meeting 2/9/22

Nathan Easley

Capabilities currently under development

- **Event editing in Pro**
 - **Adding and editing events using core tools and attribute table**
 - **Add Single Point, Single Line, Multiple Point, and Multiple Line event tools**
 - **Attribute sets (configuration and modification)**

Support Incidents/Defects

- **BUG-000144531** – Running Export Network returns different results if input layer is stored in file gdb or enterprise gdb (fixed, being ported into patch)
- **BUG-000146038** – Reassigning Route Upstream Incorrectly Updates Route Measures (fixed, being ported into patch)

Other Announcements

- Next round of 10.8.1/10.7.1 patches being prepared
- GIS-T hands on learning lab and customer meetings

Demos



esri

THE
SCIENCE
OF
WHERE



ArcGIS Field Maps

Q1 2022 release (LRS focus)



ArcGIS Field Maps 2021

Nov 2nd – 2020
Initial release!
(mobile apps only)

Dec 09th – 2020
Field Maps web released!
Forms update (required fields, input types, read-only, ...)
iOS dark mode
Track for a duration
Track via App Links, Google Assistant
Apple Watch support

April 14th – 2021
Introduce map settings
Forms update (radio buttons/barcode)
New submit experience (iOS)
iOS 14 refresh
Map Viewer classic supports forms
Add layers, group layer support (web)

June 29th – 2021
New sharing experience
Shared update groups
Conditional visibility improvements
Switch input type
Copy feature action
New form editing experience
Tracking required in map

Sept 14th and 22nd – 2021
September 14 - Integromat app released
September 22 – bug fix update
(web/mobile)

Dec 16th – 2021
Android V2 released!
Conditional Visibility expression builder
Recently used templates
My Places > Favorites
Indoors update
Offset with Spike, Bad Elf
GPS Location setting
Track Categories
New offline settings



ArcGIS Field Maps Linear Referencing Support

- Mobile user requirements:

- Find a station and offset along a selected route
- Interpolate a measurement value closest to users current location
- Search for a measurement along a route
- Support search connected or offline
- Capture a new location at measure location and store the interpolated measurement value in the geometry of the new feature
 - Optionally calculate and store the measure value, route id as attributes of a feature
- Use the Compass Tool to determine how far user is away from the measurement and update distance/direction when in motion.
- Get driving directions to the location of an interpolated measure
- Mark interpolated location as a favorite so you can go back to it



Take alignments in the field



Conduct Asset Inventory



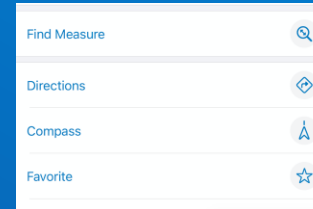
Perform Inspections



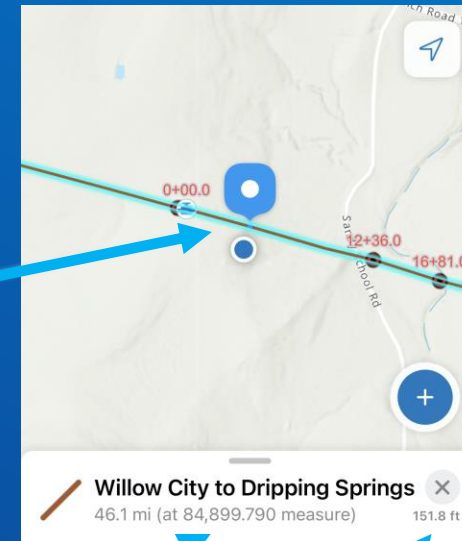
ArcGIS Field Maps Find Measure

Find Measure Feature Action:

- Find nearest measure value to workers location
- Enter measurement value along route you need to locate
- Show measurement location on map, measurement value and distance away in the subtitle of the route details
- Collect at measure location
 - Capture the measure value in the geometry of the new event feature
 - Using form calculations, the measure value and intersecting route id can be captured.



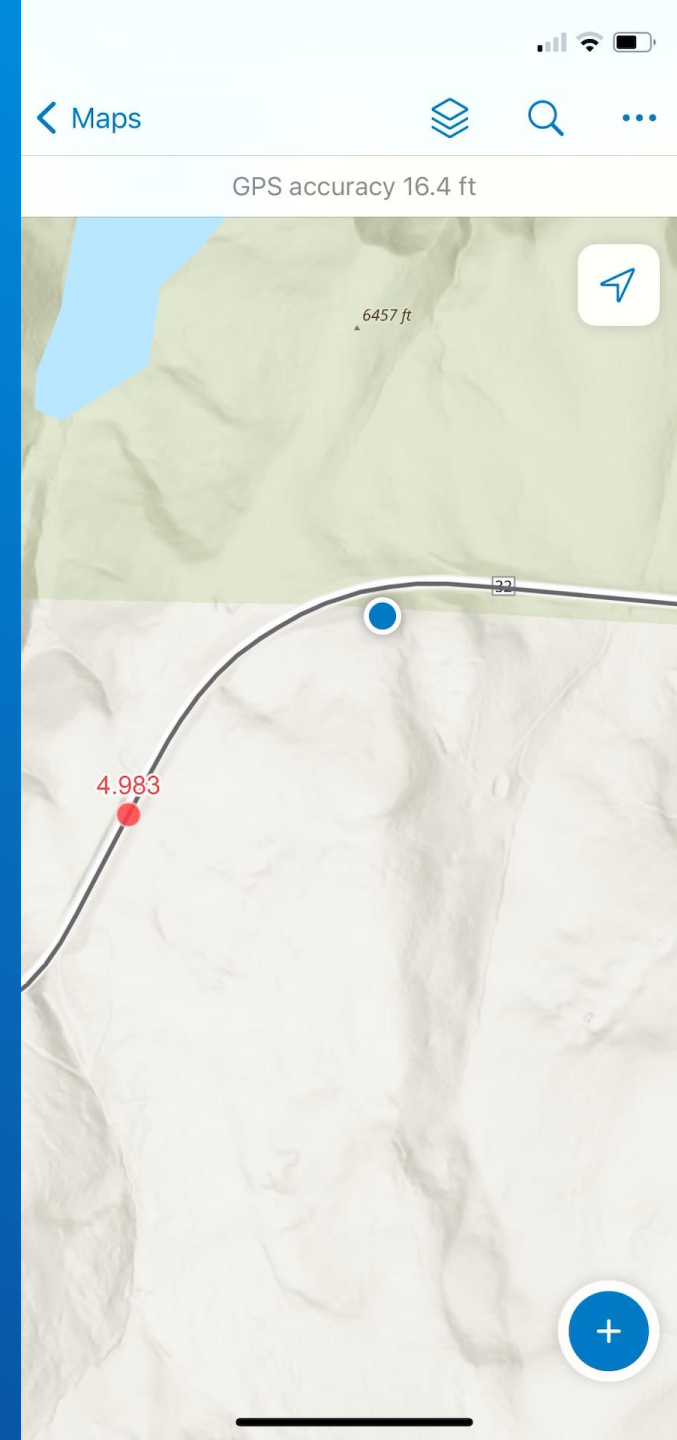
Find measure feature action



Interpolated location

Measure value

Distance away

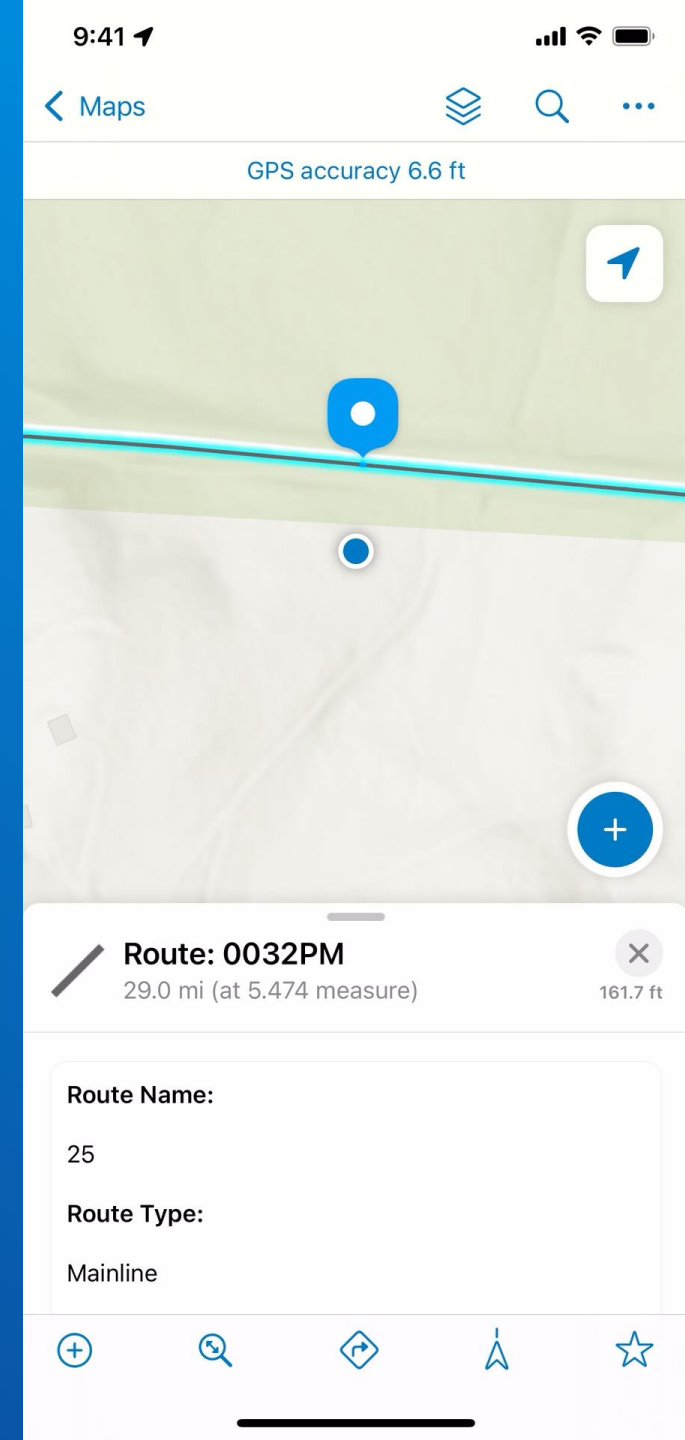




ArcGIS Field Maps Find Measure

Find Measure Feature Action cont'd:

- Use the Compass to locate measurements along a route
- Get driving directions to the measurement along a route (Navigator, Google Maps, Apple Maps)
- Mark the location as a favorite so you can search for it and revisit it later

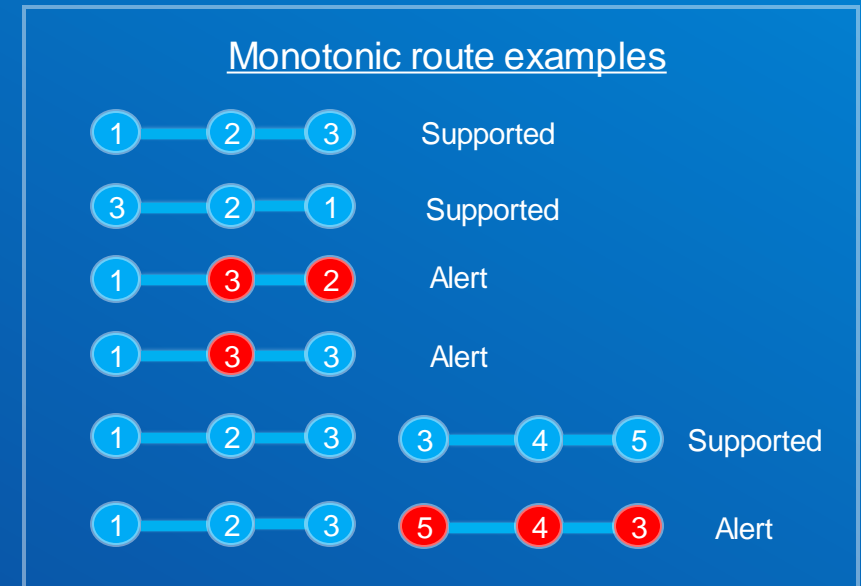




ArcGIS Field Maps Find Measure

- Additional details

- Find Measure feature action appears when the selected polyline contains m values (does not look for or require a LRS Network dataset in the map)
- Measure values are displayed and entered as numeric values
 - Not supporting stationing notation (display or edit) in this release
- Route geometry needs to be monotonic
 - All measure values need to be ascending or descending in value
 - Measure values need to be strictly ascending or descending within a part but duplicate m values can exist at ends of parts. Invalid routes will display a message and details will be added into the Field Maps troubleshooting log.
- Interpolation will utilize z values if they exist on the selected route feature
- Interpolation will honor true curve geometries (final release)





ArcGIS Field Maps Form Calculations and Routes

- Use form calculations to manage relationships between the LRS Network dataset and event layers
 - Calculate measure value from geometry
 - Calculate Route ID from the selected route feature

Properties

Formatting

Calculated expressions

+ Add expression

Conditional visibility

Sign: Safety Sign

40.595365°N 111.368806°W 161.7 ft

Sign Type:

Safety Sign

Measure Value:

5.474

Route ID:

0032PM

Get Measure Value

Expression

```
1  
2 if(Geometry($feature)!=null)  
3 return Round(Geometry($feature).m, 3)
```

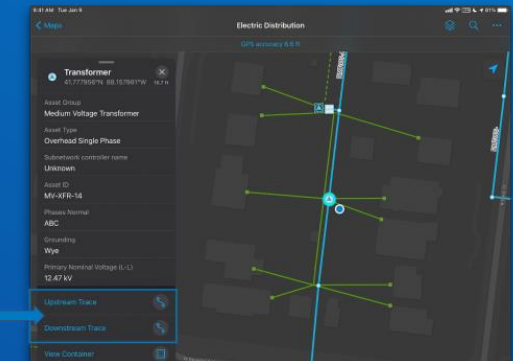
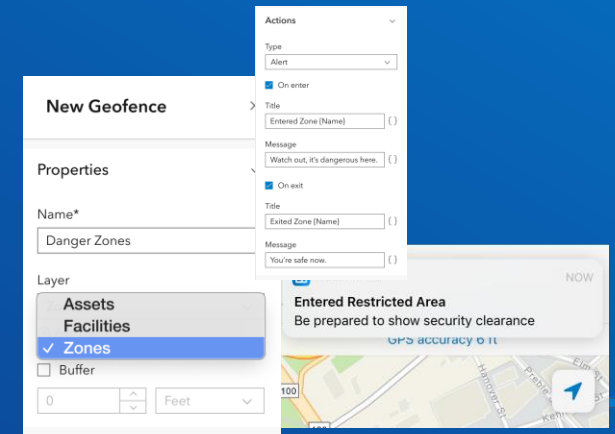
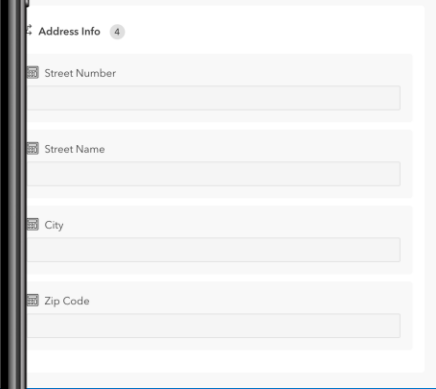
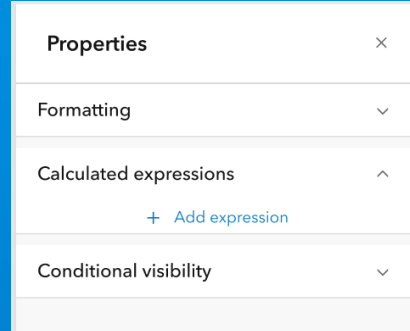
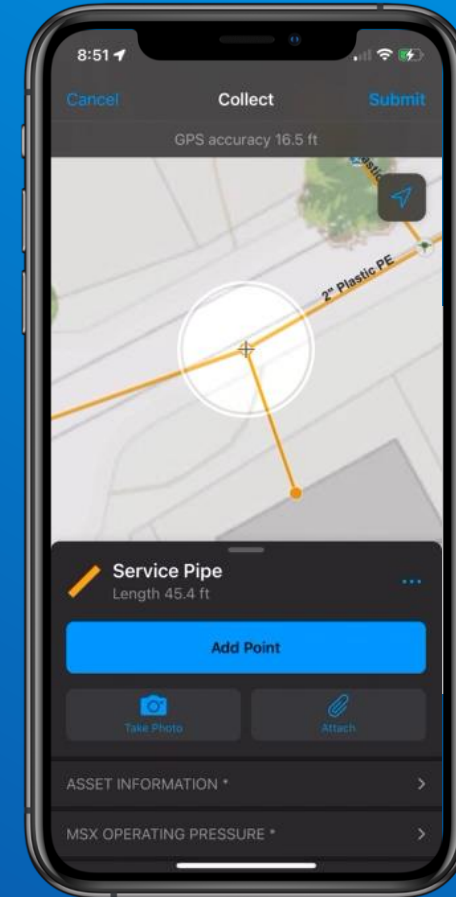
Intersect Route ID

Expression

```
1 var routeID = Intersects(FeatureSetByName($map, "Routes"), Buffer($feature, 10));  
2 if (Count(routeID) == 1)  
3 {return First(routeID).ROUTE_ID}  
4 else {return "no route found";}
```

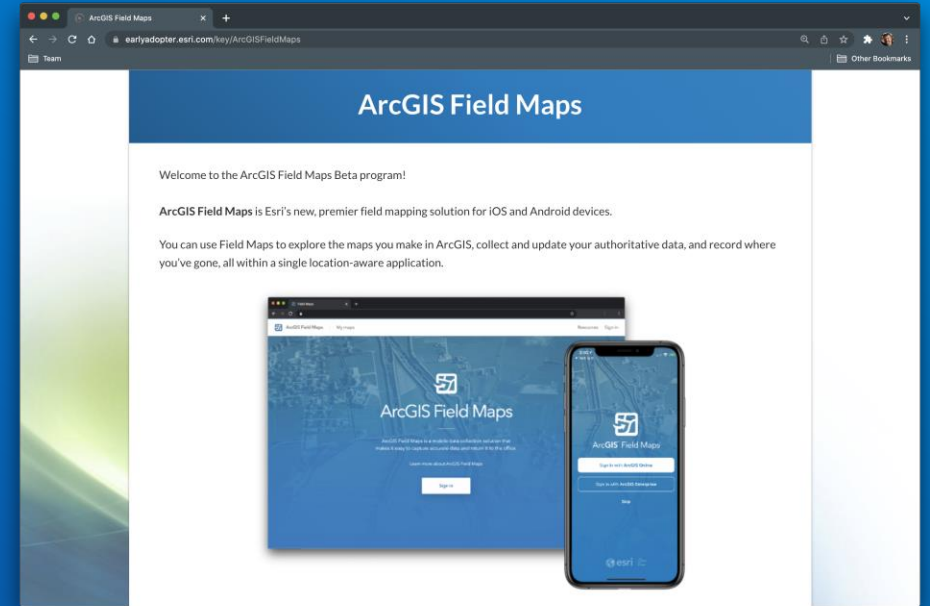
Additional Q1 2022 enhancements

- Smart form enhancements
 - Form calculations
 - Contingent Attribute Values support
 - Creating new form elements and fields
- Search by RFID (via Inframarker integration)
- GPS metadata for lines and polygons
- Improve high accuracy configuration and deployment
- Utility Network support (beta)
- Geotriggers (beta)
- Indoor Positioning research



Field Maps Early Adopter Program

- Q1 2022 EAP starting within 2 weeks
 - Sign up here:
<https://earlyadopter.esri.com/key/ArcGISFieldMaps>
 - Initial beta drop
 - Find Measure Feature Action (iOS and Android)
 - Form Calculations (iOS and Field Maps web)
 - Utility Network (iOS and Android)
 - Additional beta drops every 2 weeks
 - Final Q1 release scheduled week of **March 20th**





esri[®]

**THE
SCIENCE
OF
WHERE**[®]

from Ryan Koschatzky to everyone: 12:32 PM

Geonet <https://community.esri.com/t5/roads-and-highways-user-group-rhug/gh-p/roads-and-highways-user-group-rhug>

from Clive Reece to everyone: 12:32 PM

Link to Esri Community blog announcement: <https://community.esri.com/t5/roads-and-highways-blog/workshop-announcement-enterprise-location/ba-p/1142187>

from Kevin Hunt to everyone: 12:34 PM

Sounds terrific

from Lesh, Erin A to everyone: 12:35 PM

Agreed!

from Gary Waters to everyone: 12:38 PM

Thanks Patick for all your contributions to the RHUG. You rock!

from Sam Coldiron to everyone: 12:38 PM

Thank you for all your hard work Patrick!!! Good luck in your new role!

from Jim Mitchell to all panelists: 12:39 PM

Patrick, you call this work?

from Dave DiNocco to everyone: 12:40 PM

Good luck with your new role!

from Patrick Whiteford to everyone: 12:44 PM

Thanks everyone

from Yueming Wu to everyone: 12:46 PM

Congratulations! Patrick.

from Yueming Wu to everyone: 12:52 PM

Can you post the link to the chat room please? The EAP link

from ABHISHEK Bhargava to everyone: 12:55 PM

Can it capture the offset of the sign?

from Sam Coldiron to everyone: 12:55 PM

That is going to be a big help!

from Jeff Shaner to everyone: 12:56 PM

Here is the early adopter program link: <https://earlyadopter.esri.com/key/ArcGISFieldMaps>

from Alex Carter to everyone: 12:56 PM

Is there any thought on the management of the measures when editing routes on data created in Field Maps? (event behavior)

from Yueming Wu to everyone: 12:56 PM

Got it. Thank you Jeff. We will be part of it.

from ABHISHEK Bhargava to everyone: 12:57 PM

Will follow up offline

from Patrick Kemble to everyone: 12:59 PM

Could/should we set up another side meeting with Jeff to go over use cases or get some kind of a pole going. Multiple departments with multiple needs!

from Kevin Hunt to everyone: 1:00 PM

Thank you Jeff. Great to see the progress on this.

from Patrick Kemble to everyone: 1:01 PM

I missed the info on signing up for the beta testing. How do we get in on that?

from Alex Carter to everyone: 1:01 PM

Sounds good, thanks

from Kevin Munro to everyone: 1:01 PM

Great work, Jeff, INDOT is interested in being involved in further discussion/workshopping.

from Ryan Koschatzky to everyone: 1:02 PM

@Pat, we should have the video and chat post by Friday.

from Patrick Kemble to everyone: 1:02 PM

Thanks Ryan

from Ryan Koschatzky to everyone: 1:03 PM

No problem.

from Alex Carter to everyone: 1:05 PM

Will we need a license for event editing in Pro?

from Kevin Hunt to everyone: 1:05 PM

I think part of that future discussion around the Field Maps workflow should be among the users to compare desired approaches to the field coordinates vs. LRM location. I'm very interested to see if we generally agree on an approach or if there are a variety of approaches to what is stored for geometry vs. location attributes. We can get this started on GeoNet!

from Lesh, Erin A to everyone: 1:06 PM

Great idea Kevin

from Brett Lawson to everyone: 1:17 PM

Does the densify work with the AppendRoutes geoprocessing tool?

from Kevin Munro to everyone: 1:23 PM

How does m on route calibration point honor multipart routes where the business rule adding increment is set for the LRS?

from ABHISHEK Bhargava to everyone: 1:26 PM

Is this in Pro 2.9? or coming in Pro 3.0?

from Kevin Munro to everyone: 1:27 PM

We would need it to honor the adding increment.. we ca talk offline.

from ABHISHEK Bhargava to everyone: 1:27 PM

Is there a feature class where measure values are sstored

from rahul rakshit to everyone: 1:28 PM

M values can be stored in Input Features used for route loading and also in the network feature class

from ABHISHEK Bhargava to everyone: 1:29 PM

I meant the measure values corresponding to the different intersecting routes

from rahul rakshit to everyone: 1:33 PM

The measures are saved at each vertex of the route in a network feature class. To show the measure at a loaction between two vertices we are interpolating the measures between the them.

from aric mueller to everyone: 1:36 PM

where a route self-intersects (ie. where there is an intersection) is that 1 calibration point or 2?

from aric mueller to everyone: 1:36 PM

great answer!

from Steve Nelson to everyone: 1:50 PM

we feel your pain

from Sam Coldiron to everyone: 1:50 PM

Does the Locate Features Along Routes tool still exist? Is the main difference that this tool will update attributes within the Input Features table instead of creating a new Feature Class?

from Bo Guo to all panelists: 1:52 PM

OGC considers self-intersecting geometry (polyline or polygon) as invalid. Could you tell us the rational behind Esri's support for self-intersecting polylines?

from Sam Coldiron to everyone: 1:52 PM

That makes sense! Thanks!

from praveen kumar to everyone: 1:52 PM

@Kevin Munro, the calibration method is honored in the Geometry Length method, the m on route method will consider the m values on the feature to create calibration points

from Clive Reece to everyone: 1:53 PM

@Bo - Simplest answer is many customers model their roads and routes with self-intersections. Our support mirrors what the community is requiring.

from Kevin Munro to everyone: 1:54 PM

@praveen kumar Thanks

from Bo Guo to all panelists: 1:54 PM

Makes sense!

from Aaron Ferrari to everyone: 1:56 PM

Thank you everyone.

from Sara Thompson to everyone: 1:56 PM

Thanks all!

from Kevin Munro to everyone: 1:56 PM

Excellent RHUG meeting everyone, thanks!!

from Sam Coldiron to everyone: 1:56 PM

Thank you!

from praveen kumar to everyone: 1:56 PM

Thanks all

from Kevin Hunt to everyone: 1:56 PM

Terrific meeting. Thank you

from Kathleen Mohla to everyone: 1:56 PM

Thank you to everyone who presented!