Introduction to Filters

Contents

Summary

This document explains how filters are defined and used within the Lemur Pro application.

What is a Filter?

A filter is a Lemur Pro concept used to refine the visible data on the map from either the business objects collection and/or the feature layers.

How are filters defined?

Filters are configured in the bundle in 5 locations:

1. FilterResultFields under individual FeatureServices/Collections
2. LayerFilters under root
3. ValueCollections under root
4. FilterMaxResults under MapControlConfigurationData
5. ApplyFilterResultsToVisibleObjects under MapControlConfigurationData

FilterResultFields

The FilterResultFields collection identifies which fields from the business object layer or feature layer will

FilterResultsFields example JSON:

```
"FilterResultFields": [
        {
                "Id": "6aba7687-ba77-4f87-88fc-f6f3ed257393",
                "InternalFieldName": "WONum"
        },
        {
                "Id": "0f2de683-4ba8-4ef7-a5e5-a235d1199441",
                "InternalFieldName": "Description"
        },
        {
                "Id": "62f9fa1b-f990-40b88df8-05de0880f3ea",
                "InternalFieldName": "Type"
        }
],
```

- InternalFieldName - The internal field name of the field(s) to be returned in filter results.

LayerFilters example JSON:

```
"LayerFilters": [
    {
      "Id": "4acfc834-13d7-442f-b26b-13f17f69d7c7",
      "LayerId": "5d335f01-ed2c-45c1-a0d5-7502073f9f1a",
      "LayerIds": null,
      "Fields": [
        {
          "Id": "82cbe0dc-cb2b-4747-b45e-657d5d1292eb",
          "InternalFieldName": "STATUS",
          "DataType": "String",
          "MatchOption": "Exact",
          "FilterLabel": "Operations Status",
          "ValueCollectionId": "68f42739-ca41-4a7f-b4d9-3c49d81987bb",
          "Comment": null
        },
        {
          "Id": "d0bc69ab-dfa2-4427-91a7-7fc0264714ae",
          "InternalFieldName": "WORKCNTR",
          "DataType": "String",
          "MatchOption": "Exact",
          "FilterLabel": "Operations Work Center",
          "ValueCollectionId": "8d3833ac-b8f6-4709-b2cc-e1d37431c5cf",
          "Comment": null
        },
        {
          "Id": "6c063d97-dabd-4fc6-950c-d822def0ba36",
          "InternalFieldName": "ASSIGNED",
          "DataType": "String",
          "MatchOption": "Contains",
          "FilterLabel": "Operation Assigned To",
          "ValueCollectionId": "61adbed2-1958-42f4-b877-c021ee590f0b",
```

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```
            "Comment": null
        }
    ],
    "Comment": null
},
```

- LayerId - The id of the layer the filter is being applied to.
- Fields - 1 to many fields to filter on
  - InternalFieldName - The internal field name of the field the filter will apply to.
  - DataType - String or Number
  - FilterLabel - The label that will appear on the filter
  - ValueCollectionId - Reference to the ValueCollection that will return values for this filter.
  - MatchOption - Exact, Contains, StartsWith, EndsWith

ValueCollections example JSON

```
"ValueCollections": [
    {
        "Id": "bcc1c979-8ec6-4fb0-83e6-d2baa35c310c",
        "Description": "Work Order Types",
        "Values": {
            "BK01": "BK01",
            "COPM": "COPM",
            "GVMT": "GVMT",
            "HYCM": "HYCM",
            "HYMT": "HYMT",
            "INSO": "INSO",
            "INSP": "INSP",
            "MNBK": "MNBK",
            "SMRO": "SMRO",
            "VIOL": "VIOL",
            "ZCOL": "ZCOL",
            "ZEMR": "ZEMR",
            "ZMSO": "ZMSO",
            "ZRES": "ZRES",
            "ZRPL": "ZRPL"
        }
    }
],
```

- Description - Only used to give the collection a friendly name. Does not show up in Lemur Pro or Agentry.
- Values - 1 too many key/value pairs.
  - The first value is the display, the second is the value. For example, if the database value of a field were "GVMT", but we wanted to show "Government" in Lemur Pro/Agentry, the entry would look like this:
  - "Government": "GVMT"
  - Values may contain Lemur Value Keys (Summer 2021 release)
  - Example ValueCollection
    ```
    {
        "Id": "61adbed2-1958-42f4-b877-c021ee590f0b",
        "Description": "Assignments",
    ```

```
          "Values": {
            "Assigned To": "#;LMR_USERID#;",
          }
        }
      }
        See bundle Dev: CLP -Fort Pierce Offline - Assigned for a working example
```

Properties under MapControlConfigurationData:
“FilterMaxResults”: 250,
“ApplyFilterResultsToVisibleObjects”: true

- FilterMaxResults - The max results returned by a filter search. Suggested value of 250 or less. > 250 will degrade performance. If filter results > FilterMaxResults, a warning will be displayed to the user.

- ApplyFilterResultsToVisibleObjects - If set to true, any active filters will filter visible map object. For example, if the work orders layer has 10 visible map objects and a filter is active which returns 2, only those 2 work orders will be visible on the map. This applies even when the filter view is closed.
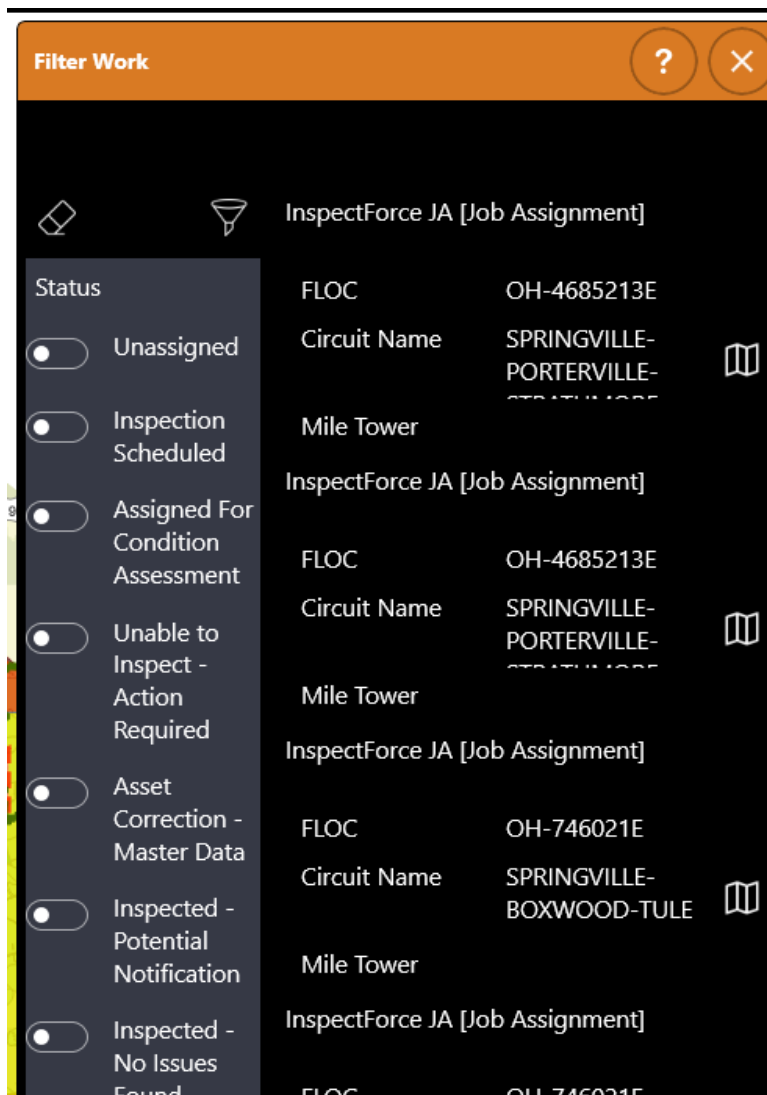

Figure 1: Filter Work

Notes on filter behavior:
- If no filter boxes are checked (or all filter boxes are checked), ALL results from the defined filter layer(s) are returned.
- If more than 1 LayerFilters are defined:
  - Results are ORed (unioned) across layers.
  - Results are ANDed within LayerFilters in the same layer.

In the below example, there are 2 filters defined for the Operations layer, and 1 for the Work Orders layer. All Work Orders are being returned because there is no Work Orders filter active, as well as Operations that meet both filters active (Status = Created AND Work Center = Mechanical)
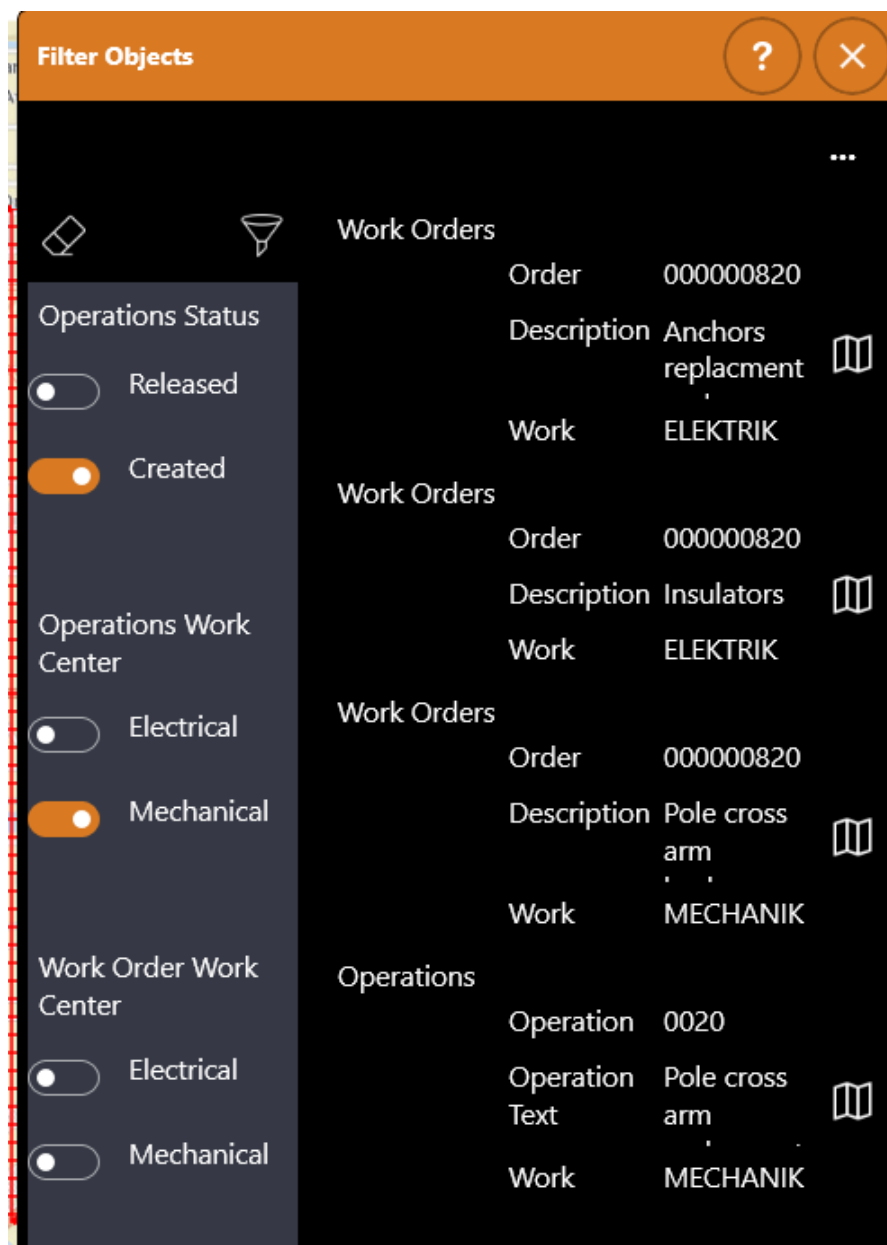

Figure 2: Filter Objects

Glossary

1. Filter - A Lemur Pro concept used to refine the visible data on the map from either the business objects collection and/or the feature layers.

2. LayerId - The id of the layer the filter is being applied to

3. InternalFieldName - The internal field name of the field the filter will apply to

4. DataType - String or Number

5. FilterLabel - The label that will appear on the filter

6. ValueCollectionId - Reference to the ValueCollection that will return values for this filter

7. MatchOption - Exact, Contains, StartsWith, EndsWith

8. Description - Only used to give the collection a friendly name. Does not show up in Lemur Pro or Agentry

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