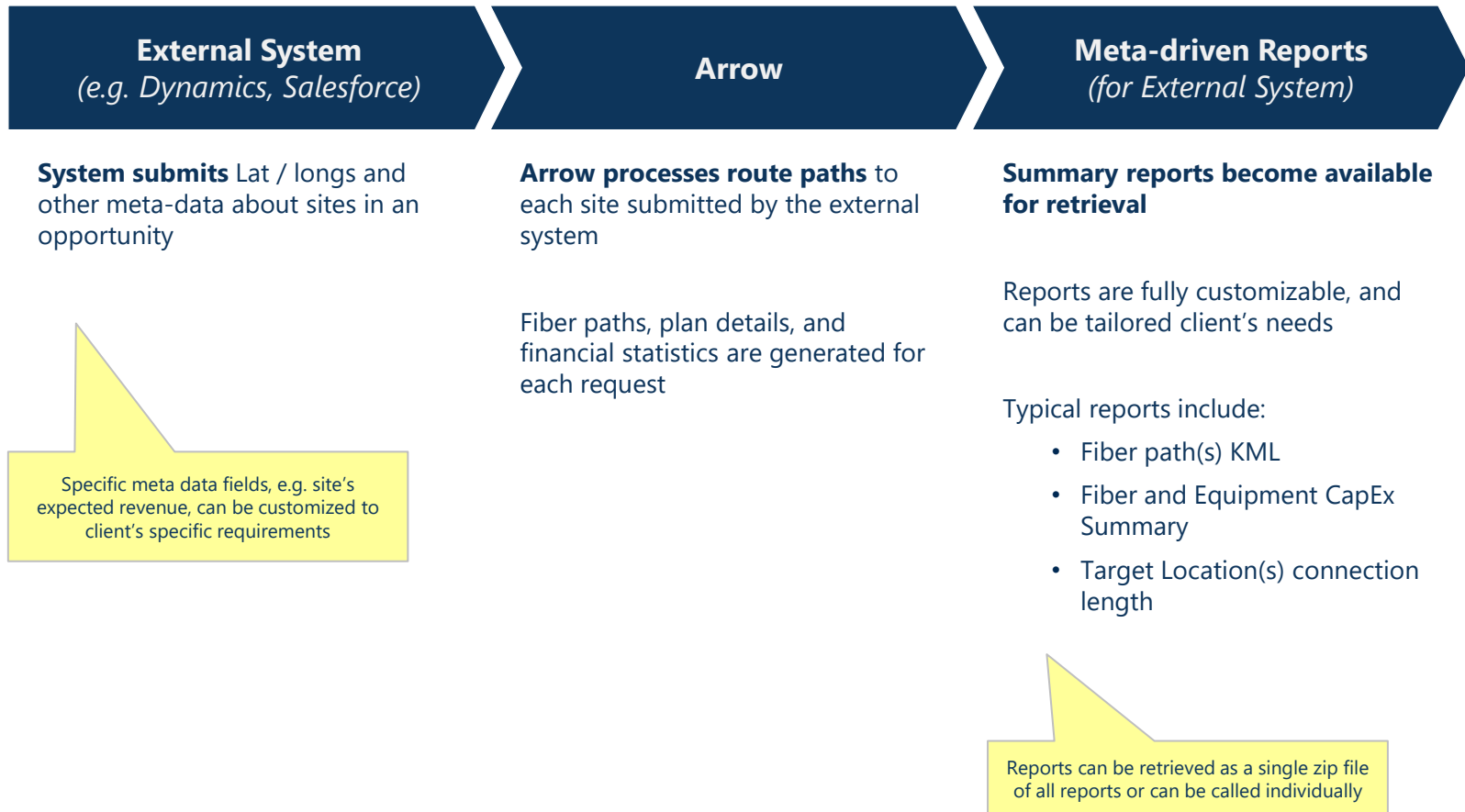

Arrow Platform

REST APIs




Arrow is set up to enable automatic, machine-to-machine, plan submission and result retrieval via REST APIs or Curl Commands



There are 4 API endpoints that can be called by external systems

- 1 OAuth Authentication**
 - Log in and receive authentication token
 - Use this token for all communication with other endpoints (e.g. submit plan)
- 2 Submit Plan**
 - Used to submit a plan to Arrow system
- 3 List of Available Reports**
 - Returns a list of reports and the way to call them
 - Set up as a dynamic list of reports, which allows for easy addition and modification of existing reports, as needed
- 4 Retrieve Individual Report**
 - Called to fetch individual report
 - Report format can be specified (e.g. csv, json)

 *Details on the following pages*

1 "OAuth" endpoint is used to log in and receive authentication token required to interact with all other Arrow endpoints

OAuth Authentication

Name of your Arrow instance

Request Command

POST `https://<app name>.aro.altvil.com/oauth/token`

CURL `curl localhost:8000/oauth/token -X POST -H "Content-Type: application/x-www-form-urlencoded" -d`

Required keys / parameters :

- username
- password
- client_id
- client_secret
- grant_type

Credentials provided by Arrow team

Example:

```
https://demo.aro.altvil.com/oauth/token?username=demo_api&password=:a7Z,/tL%<ta88"n&client_id=demo&client_secret=842G~_YTr8kpW&grant_type=password
curl localhost:8000/oauth/token -X POST -H "Content-Type: application/x-www-form-urlencoded" -d grant_type=password -d client_id=demo -d client_secret=":a7Z,/tL%<ta88"n" -d username=demo_api -d password=password
```

JSON Response

```
{
  "access_token": "eyJ...ig4",
  "token_type": "bearer",
  "refresh_token": "eyJ...n9M",
  "expires_in": 43199,
  "scope": "openid read",
  "jti": "0dc13440-50ea-40df-82f8-7fe498a39d6d"
}
```

"access_token" value is needed to authenticate with other endpoints

Token is valid for 12 hrs., and can be refreshed using "refresh_token" (grant_type=refresh_token in POST command)

2 "Process" v1 endpoint is used to define and submit basic RFP plan to Arrow

Submit RFP v1 Plan

Request Command

POST https://<app name>.aro.altvil.com/api-ext/rfp/v1/process

CURL curl http://localhost:8000/api-ext/rfp/v1/process -X POST -H "Content-Type: application/json" -H "Authorization: Bearer {BearerToken}" -d '{requestJSON}'

Authorization:

BearerToken

Value of "access_token" returned by OAuth endpoint

Request Body (JSON):

```
{
  "rfpld" : "Sample Plan",
  "fiberRoutingMode": "ROUTE_FROM_FIBER",
  "targets": [
    {"id": "target 1", "longitude": -100.356068, "latitude": 25.761247},
    {"id": "target 2", "longitude": -122.2876577586806, "latitude": 47.623841305540914}
  ]
}
```

Unique plan name

- Available options:
- ROUTE_FROM_FIBER
 - ROUTE_FROM_NODES

List of target locations (id, latitude, longitude); can be expanded as needed

JSON Response

```
{
  "planId": 3211,
  "planName": "sample rfp a4e82abc-48ca-4fcb-9aed-0654c52bd28a",
  "status": "OK"
}
```

System-generated plan id to reference when calling report endpoints

2 "Process" v2 endpoint is used to define and submit Direct Routing-type plans to Arrow

Submit RFP v2 Plan

Request Command

POST https://<app name>.aro.altvil.com/api-ext/rfp/v2/process

CURL curl http://localhost:8000/api-ext/rfp/v2/process -X POST -H "Content-Type: application/json" -H "Authorization: Bearer {BearerToken}" -d '{requestJSON}'

Authorization:

BearerToken

Value of "access_token" returned by OAuth endpoint

Request Body (JSON):

```
{
  "rfpld": "Sample Plan",
  "routingMode": "DIRECT_ROUTING",
  "rfpProjectName": "v2_template",
  "targets": [
    {"id": "target 1", "longitude": -100.356068, "latitude": 25.761247},
    {"id": "target 2", "longitude": -122.2876577586806, "latitude": 47.623841305540914}
  ]
}
```

Unique plan name

Available options:

- DIRECT_ROUTING
- P2P

Project name to use for this request (stores info about data layers and resource managers to use in the plan)

List of target locations (id, latitude, longitude); can be expanded as needed

JSON Response

```
{
  "planIds": [ 23199 ],
  "rfpld": "test v3",
  "status": "COMPLETED",
  "request": {
    "rfpProjectName": "v2_template",
    "analysisStrategy": "AUTO_ANALYSIS_AREA",
    "fiberRoutingMode": "ROUTE_FROM_FIBER",
    "routingMode": "DIRECT_ROUTING",
    "rfpld": "test v3",
    "targets": [ { "latitude": "47.450329", "id": "14296258", "longitude": "-122.445911" } ]
  }
}
```

System-generated plan id to reference when calling report endpoints

Confirmation of settings used for this plan

3 "Report-definition" endpoint returns a dynamic list of available reports and the way to call them

List of Available Reports

Request Command

GET <https://<app name>.aro.altvil.com/api-ext/rfp/v1/report-definition>

CURL `curl http://localhost:8000/api-ext/rfp/v1/report-definition -X GET -H "Authorization: Bearer {BearerToken}"`

Authorization:

BearerToken

Value of "access_token" returned by OAuth endpoint

JSON Response

```
[ {
  "reportData": {
    "id": 31,
    "reportType": "RFP",
    "name": "rfp_output",
    "displayName": "RFP Output",
    "media_types": [
      "csv",
      "json",
      "xls"
    ]
  },
  "href": "/api-ext/rfp/v1/{planId}/report/31.{mediaType}"
},
{
  "reportData": {
    "id": 34,
    "reportType": "RFP",
    "name": "RFP_KML",
    "displayName": "RFP KML",
    "media_types": [
      "kml"
    ]
  },
  "href": "/api-ext/rfp/v1/{planId}/report/34.{mediaType}"
}
]
```

Report id to reference when retrieving individual reports

Report name

List of available download file formats / media types

URL to retrieve report:
{planId} = unique plan id from "Submit Plan" endpoint's response body
{mediaType} = eligible report file format, specific to the report

4 "Report" endpoint is used to fetch individual reports, once the plan is processed

Retrieve Individual Reports

Request Command

GET <https://<app name>.aro.altvil.com/api-ext/rfp/v1/{planId}/report/{id}.{mediaType}>
CURL `curl http://localhost:8000/api-ext/rfp/v1/{planId}/report/{id}.{mediaType} -X GET -H "Authorization: Bearer {BearerToken}"`

Authorization:

BearerToken

Value of "access_token" returned by OAuth endpoint

Variables:

- {planId} – Unique report id provided in plan submission response
- {id} – id identifying specific report, from report-definition endpoint response
- {mediaType} – file extension code from list of available media types associated with given report

Example: <https://demo.aro.altvil.com/api-ext/rfp/v1/3211/report/31.csv>

Response

"location_id","link_status","length_meters","segment_guid","segment_name","fiber_source"
"target 2","not connected","0.0","NA","NA",""
"target 1","connected","4675.427178876296","NA","NA","Red Alestra"

Response data structure / layout depends on the media type selected for the report, e.g. csv