



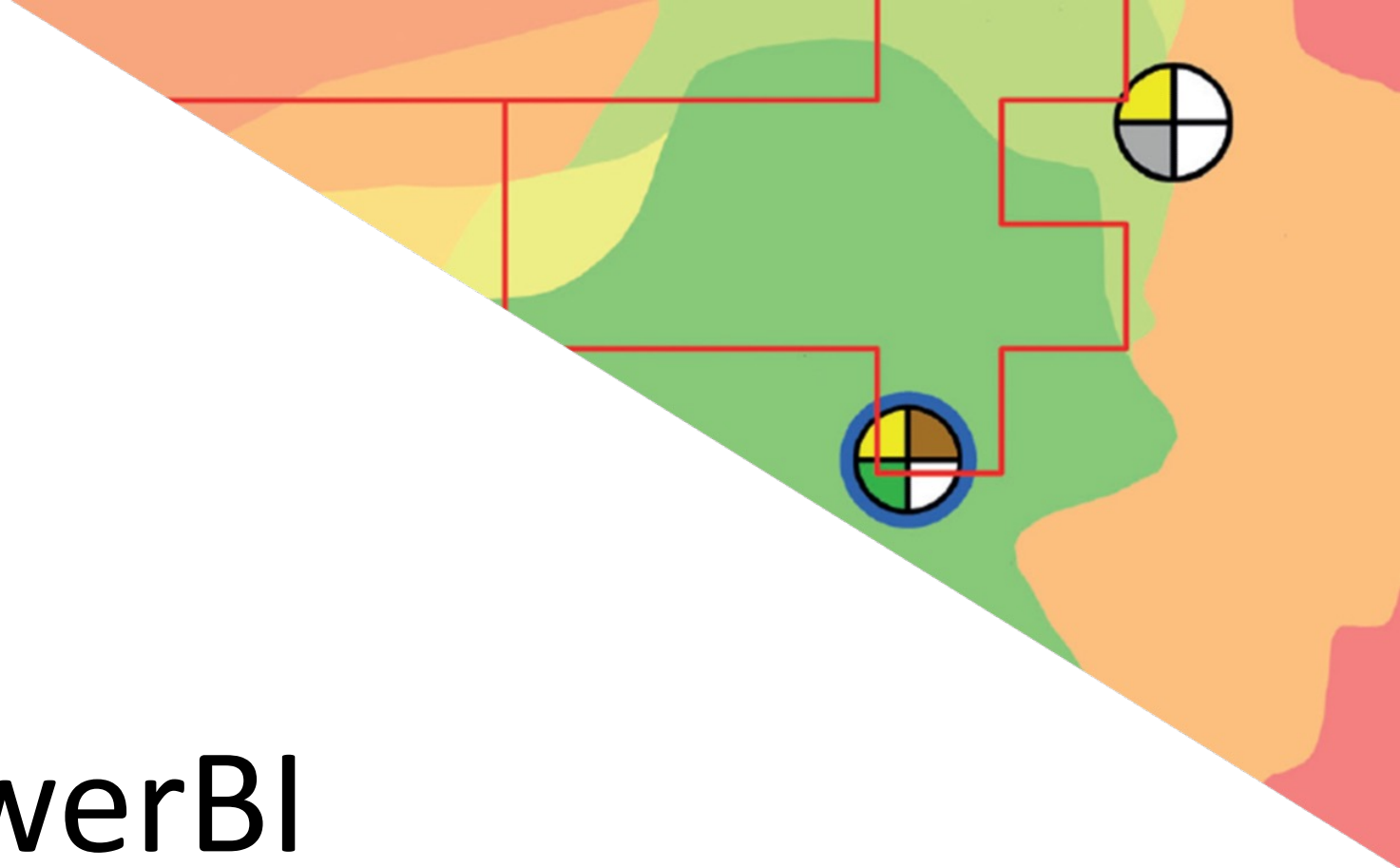
GIS packages for exploration success



# PowerBI

## GIS PAX

# Introduction



# Why do we need PowerBI dashboards?

## E&P company

SVP



VP



Team Lead



Technical



Very limited geospatial knowledge and  
lack of time to learn

PowerBI  
user



Ranker & Player (ArcGIS Pro) users with  
enough geospatial knowledge

Player &  
Ranker  
user



# How does PowerBI work?



Flow of data



Flow of data



Data sources:

- Tables
- Servers
- Live data
- etc.

PBIX file:

- Data loading
- Data queries
- Creation of new variables

Online interactive PowerBI dashboard:

- Allows users to interact with data via web interface
- Data can be filtered, but not altered
- Bookmarks of user defined data selections can be saved

## PowerBI overview

- PowerBI can read from multiple data sources and allows data editing and enrichment via a desktop interface (PowerBI desktop).
- Once the data has been prepared it can be used in multiple customizable displays.
- PBIX (PowerBI desktop files) can be published to an online workspace to share them with colleagues.
- Online workspaces can be used to publish web access with customizable access rights within an organization as well as outside of it.
- Apps can be accessed via any web browser or even a PowerBI app on your phone.
- Bespoke mobile views can be created.
- PowerBI apps can never alter any displayed data, they only allow users to filter and display subsets of the available data.
- Databases connected to PowerBI cannot be altered or updated by any actions taken via PowerBI desktop or PowerBI web apps.

# How does it work with Ranker?

## Ranker customers (global subscription)



Latest Ranker results on  
GIS PAX server



PBIX file hosted and  
maintained by GIS PAX



Online interactive PowerBI  
dashboard



Ranker customers  
(global subscription)

Ranker customers (global subscription) will have direct access to the latest Ranker data via a GIS PAX hosted PowerBI dashboard.

GIS PAX will decide on design and functionality of the dashboards and manage access permissions to it.

Customers can only view and filter data (not edit or download it) – all data remains on GIS PAX servers

GIS PAX world and data

Customer (viewer only)

## Ranker customers (with their own prospects in Ranker)



Ranker with customer  
prospects on SDE



PBIX template supplied by  
GIS PAX – modified by  
customer



Online interactive PowerBI  
dashboard – customer  
access only

Ranker customers with their own prospects and leads can connect a GIS PAX supplied PBIX (PowerBI) template filed with their won SDE.

Functionality and design of PowerBI can be modified and extended by the customer.

GIS PAX will provide support and training in respect to loading prospects into Ranker, but not in PowerBI design or functionality.

All access rights as well as data storage and security are managed solely by the customer.

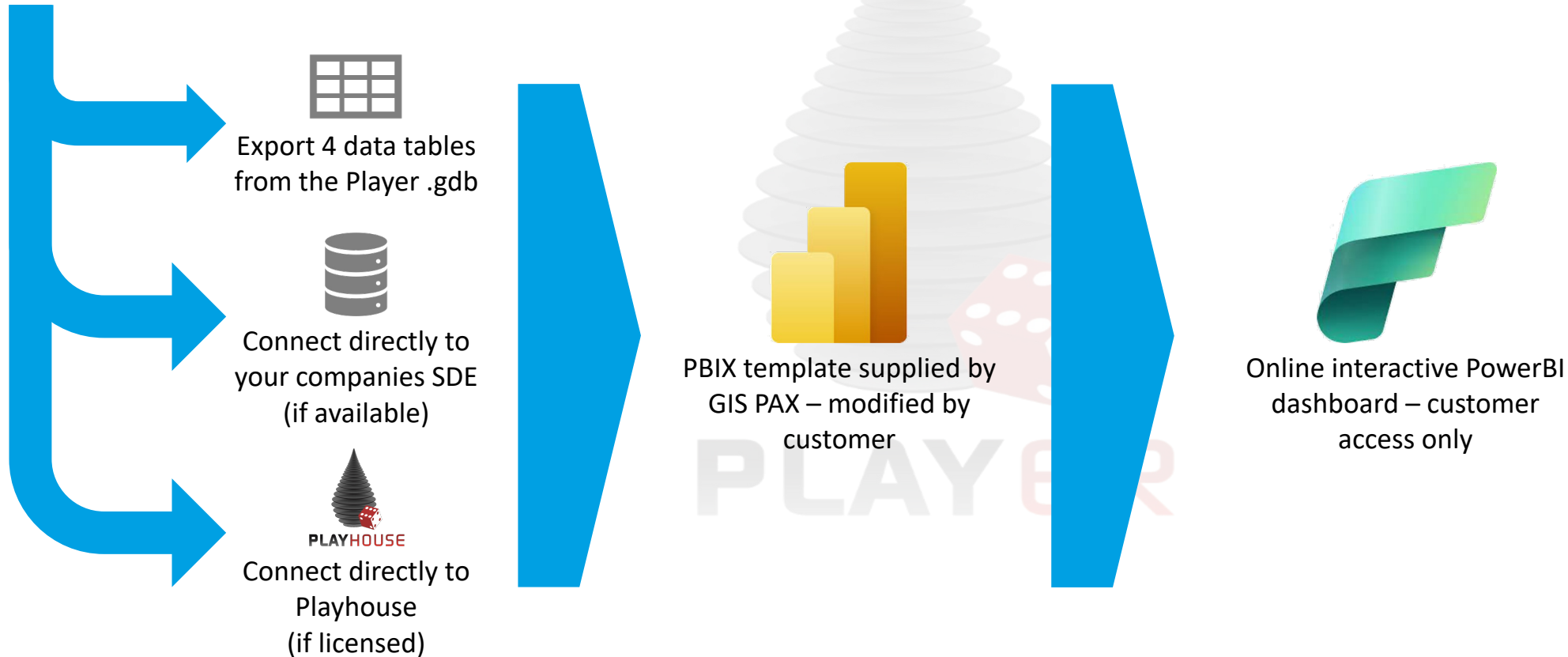
Customer

# How does it work with Player?



## Player and PowerBI

- Player data can be linked to PowerBI via 3 possible workflows.
- All possible data connections are compatible with a GIS PAX supplied PBIX template file.
- The GIS PAX PBIX template file can be fully customized and modified by any Player customer.
- Should a player customer decide to change their Player connection to a different one, only minor adaptations will be necessary.
- A link of Player to PowerBI allows Managers to quickly and easily access volumes and risks of the exploration portfolio.



# How does it work with Player? (I)



Export 6 data tables  
from the Player .gdb

## The "cheap and cheerful" way of linking Player and PowerBI

- This workflow can be used by any Player customer with access to PowerBI
- In ArcGIS Pro 6 tables need to be exported and stored locally or on SharePoint
  - 1) Fields
  - 2) Pools
  - 3) ProspectTargets
  - 4) ProspectSummary
  - 5) Well\_Pd
  - 6) Play\_Pd
- The exports need to be done manually and be kept up to date
- Linking multiple Player projects will increase the amount of export tables and require additional work within the PBIX template



### Pros

- No additional costs to Player License
- Once established a review step can be included in the process
- Enables managers to access prospect volumes and risks via web browser, phone and tablet
- Once data model is in place, a simple replacement of the export tables is sufficient to update the dashboard



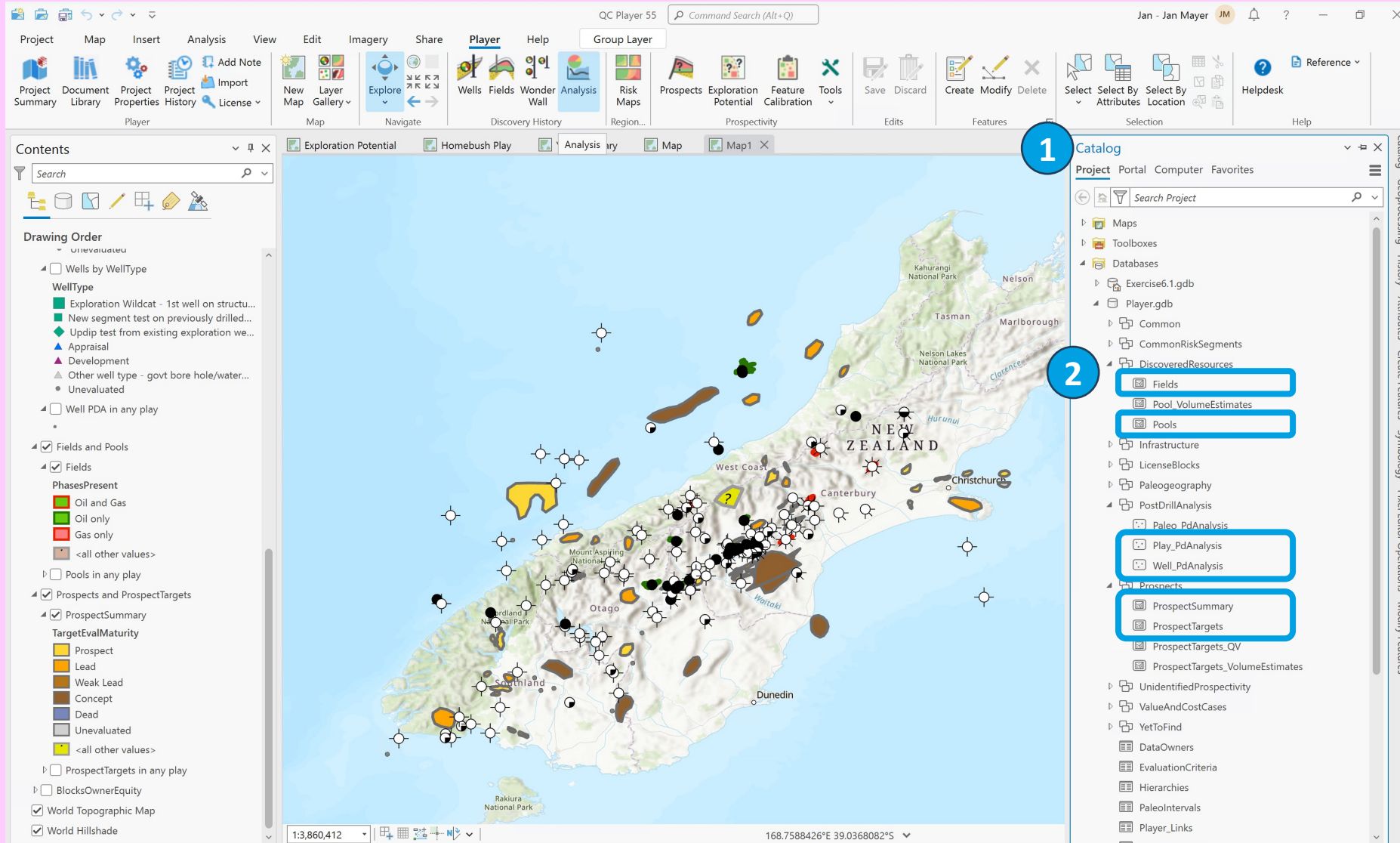
### Cons

- Manual export is required to get data out of Player
- Export tables must be kept up to date manually
- Linking more than one project will result in more export tables as well as in a requirement to adapt the data model every time a project is added



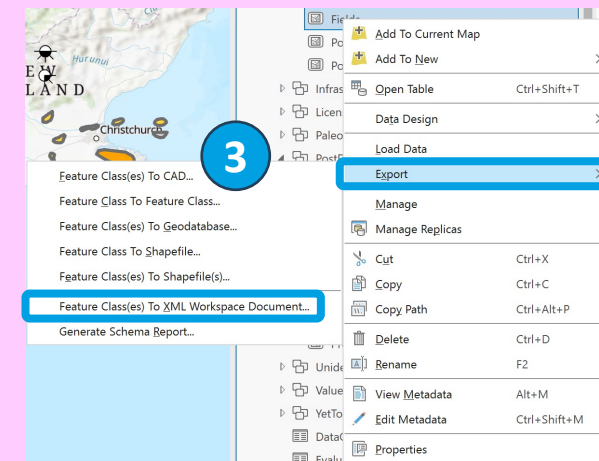


# How to link Player to PowerBI (I)



## Export data from ArcPro

- 1) Open Catalog pane in ArcPro
- 2) Locate six highlighted feature classes
  - Fields
  - Pools
  - Play\_PdAnalysis
  - Well\_PdAnalysis
  - ProspectSummary
  - ProspectTargets
- 3) Right click on each feature class, select export and export the feature class to XML (use the same names as in the Catalog pane for your exports)





# How to link Player to PowerBI (II)

1 OneDrive

+ Share Copy link Download Automate

My files > XMLs for PowerBI

2

Power BI Player PowerBI link

+ New Upload Create app Manage access Workspace settings

- Folder (Preview)
- Report
- Paginated report
- Scorecard
- Dashboard
- Semantic model
- Dataflow**
- Datamart (Preview)
- Streaming dataset
- Streaming dataflow
- More options

3

There's nothing here yet

Add something new, or upload something to see them here.

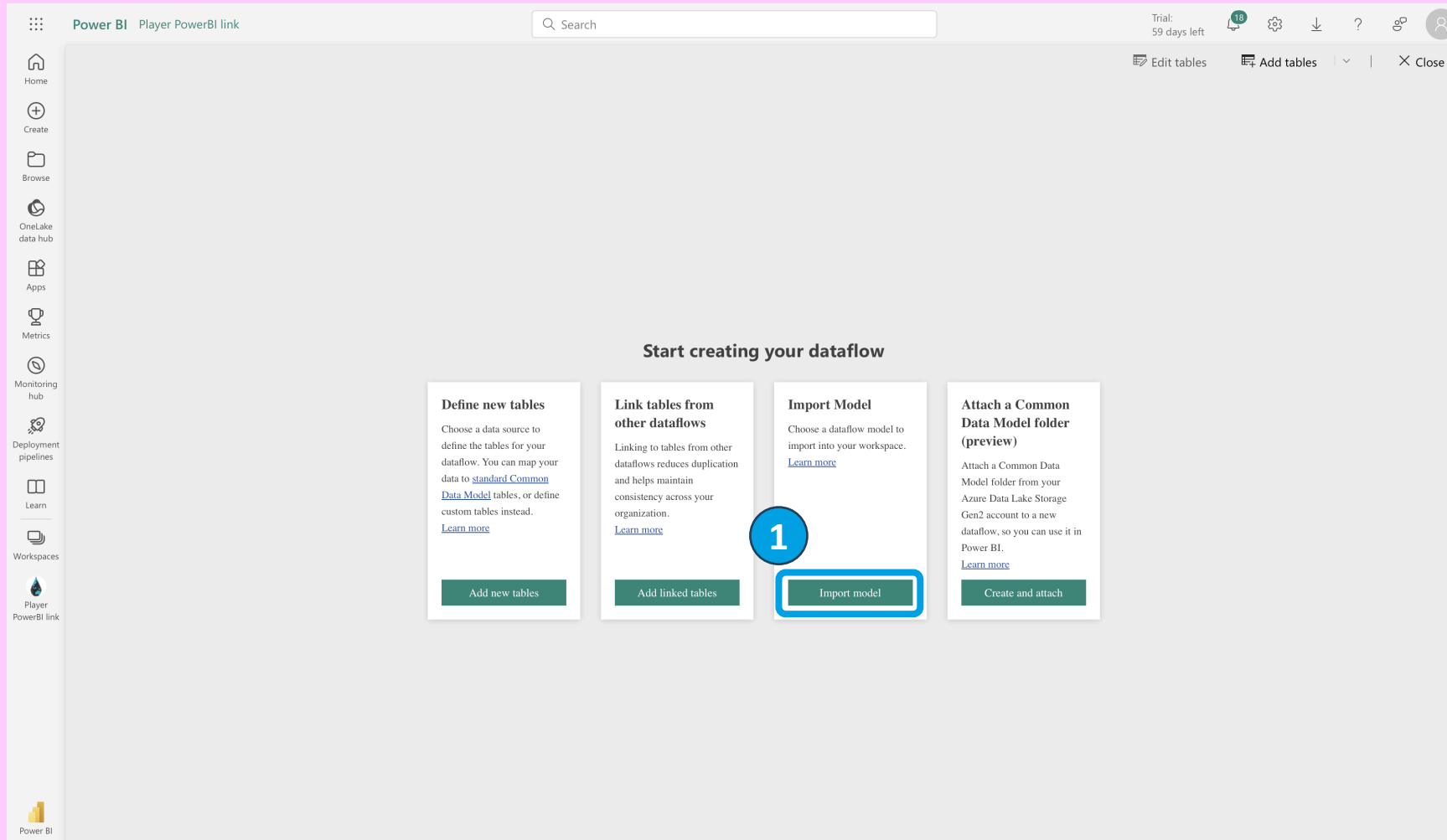
## Create Dataflow

- 1) Store exported XML files on OneDrive or SharePoint
- 2) Create PowerBI workspace
- 3) Create new Dataflow





# How to link Player to PowerBI (III)



## Import Dataflow template

- 1) Click import model and navigate to the location of the template JSON file (template can be requested via [support@gis-pax.com](mailto:support@gis-pax.com))



# How to link Player to PowerBI (IV)

Training\_Player

Search

Trial: 59 days left

1 Edit tables Add tables Close

TABLE NAME	TABLE TYPE	ACTIONS
▶ Headers_Fields	Custom	📄 🗑️ ⚙️ 📄
▶ Fields	Custom	📄 🗑️ ⚙️ 📄
▶ Headers_Propects	Custom	📄 🗑️ ⚙️ 📄
▶ Prospects	Custom	📄 🗑️ ⚙️ 📄
▶ Headers_Wells	Custom	📄 🗑️ ⚙️ 📄
▶ Pd_Wells	Custom	📄 🗑️ ⚙️ 📄
▶ Headers_Plays	Custom	📄 🗑️ ⚙️ 📄
▶ Pd_Plays	Custom	📄 🗑️ ⚙️ 📄
▶ PlayDef	Custom	📄 🗑️ ⚙️ 📄
▶ Headers_Prospect_Sum	Custom	📄 🗑️ ⚙️ 📄
▶ Prospect_Sum	Custom	📄 🗑️ ⚙️ 📄
▶ Headers_Pools	Custom	📄 🗑️ ⚙️ 📄
▶ Pools	Custom	📄 🗑️ ⚙️ 📄

Home Create Browse OneLake data hub Apps Metrics Monitoring hub Deployment pipelines Learn Workspaces Player Training\_Player Player\_Training Power BI

## Edit Dataflow template

- 1) Click on edit tables



# How to link Player to PowerBI (V)

Power Query Editor interface showing the 'Queries' pane on the left, the main query grid, and the 'Query settings' pane on the right. The 'Queries' pane lists various queries, including 'Fields', 'Headers\_Fields', 'Pd Wells', 'Pools', 'Prospects', 'Pd Plays', and 'Play definitions'. The main query grid displays a table with columns 'Name' and 'Index'. The 'Query settings' pane shows the 'Applied steps' list, including 'Source', 'Navigation X', 'Navigation', 'Navigation 1', 'Navigation 2', 'Navigation 3', 'Navigation 4', 'Navigation 5', 'Changed c...', 'Choose col...', and 'Added index'.

## Edit Dataflow template

- 1) Expand all folders
- 2) Select first table
- 3) Click on gear symbol next to Source
- 4) Paste the link to the corresponding XML file or navigate to the file (if the file is on OneDrive)

Repeat these steps for all tables (except PlayDef)

4

## XML

☒ Link to file ☐ Upload file (Preview) ⓘ

File path or URL \*



# How to link Player to PowerBI (VI)

Training\_Player

Power Query

Home Transform Add column View Help

Get data Enter data Manage connections Options Manage parameters Refresh Advanced editor Choose columns Remove columns Keep rows Remove rows Filter rows Sort Split column Group by Data type: Text Use first row as headers Replace values Combine Map to entity AI insights Export template

Queries [13]

Fields [2]

Headers\_Fields

Fields

Pd Wells [2]

Headers\_Wells

Pd\_Wells

Pools [2]

Headers\_Pools

Pools

Prospects [4]

Headers\_Prospects

Prospects

Headers\_Prospect...

Prospect\_Sum

Pd Plays [2]

Headers\_Plays

Pd\_Plays

Play definitions [1]

PlayDef

Table.CombineColumns(#"Duplicated column", {"Column1", "Play unsorted - Copy"}, Combiner.CombineTextByDelimiter(" ", QuoteStyle.None), "Play")

1 Shows 00 Shows

2 Bradley Carbonate 01 Bradley Carbon...

3 Homebush Sst 02 Homebush Sst

4 Kokoamu Sst 03 Kokoamu Sst

5 Waipara Sst 04 Waipara Sst

6 Moeraki Sst 05 Moeraki Sst

7 Basement 06 Basement

3

Create table

Copy and paste data into the table, or enter data manually.

Use first row as headers

ABC 123	Play unsorted	ABC 123	Order	+
1	Shows	00		
2	Bradley Carbonate	01		
3	Homebush Sst	02		
4	Kokoamu Sst	03		
5	Waipara Sst	04		
6	Moeraki Sst	05		
7	Basement	06		
+				

Cancel OK

Query settings

Properties

Name

PlayDef

Entity type

Custom

Applied steps

Source

Duplicated ...

Merged col...

2

1

Columns: 2 Rows: 7

Cancel Save & close

4

5

Changes saved

Your changes have been saved, but your data will only be updated at the next scheduled refresh.

Refresh now Set a refresh schedule

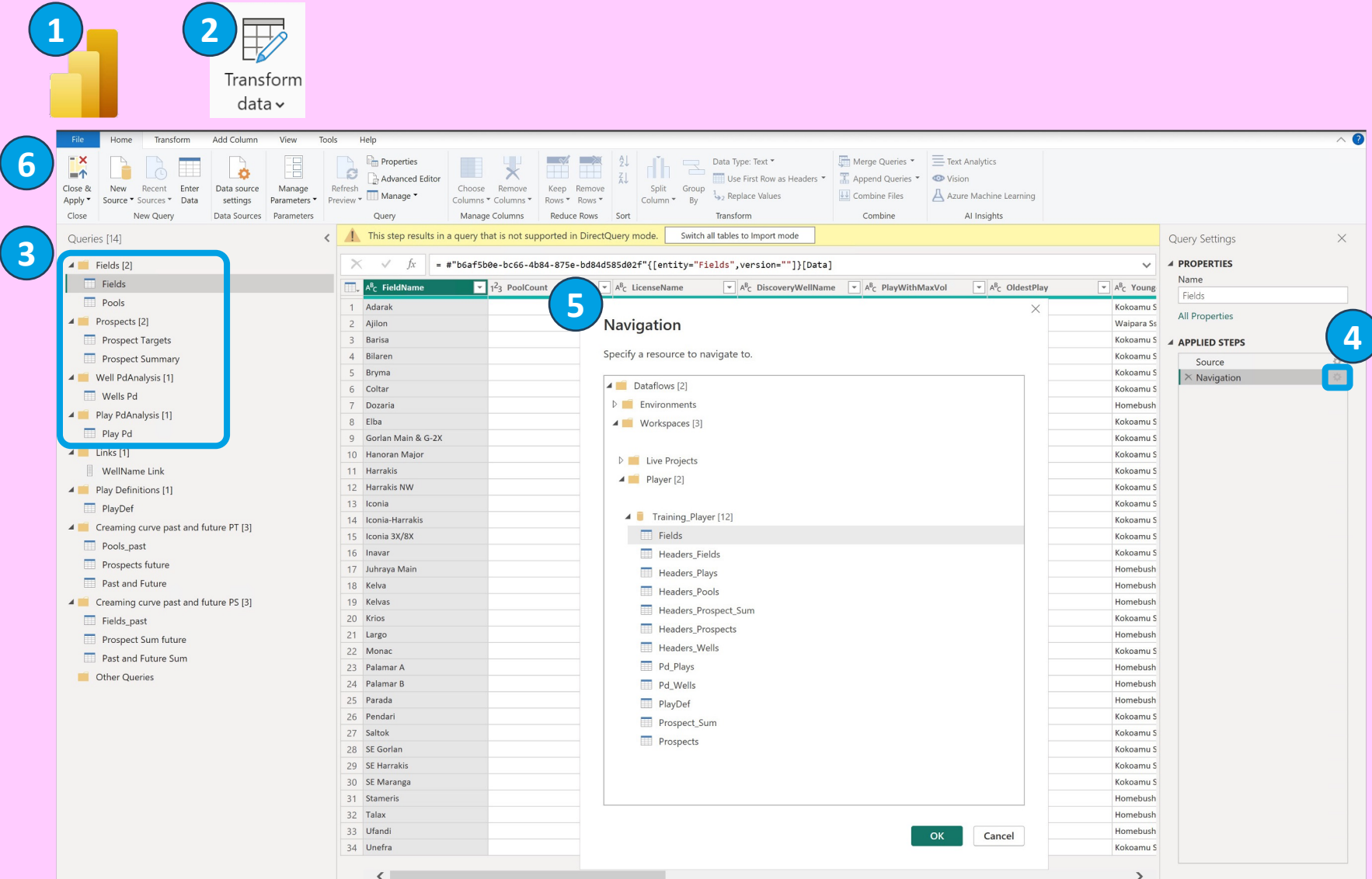
## Rearrange Plays (if necessary)

PowerBI will always sort alphabetically. To keep the plays in a chronostratigraphic order a number can be assigned to each Play.

- 1) Select PlayDef
- 2) Click on gear symbol next to Source
- 3) Insert chronostratigraphically increasing numbers for each play (2 digits recommended)
- 4) Click Save&close
- 5) Press "Refresh now" on the pop-up



# How to link Player to PowerBI (VII)



The screenshot shows the PowerBI Desktop interface with several steps highlighted by numbered circles:

- 1**: Yellow bar icon in the top left corner.
- 2**: "Transform data" button in the top left corner.
- 3**: "Fields" list on the left sidebar, with "Fields [2]" selected.
- 4**: "Navigation" pop-up window, with the "Navigation" step selected in the "APPLIED STEPS" pane.
- 5**: "Navigation" pop-up window, with the "Fields" table selected in the "Dataflows [2]" pane.
- 6**: "Close & Apply" button in the top left corner.

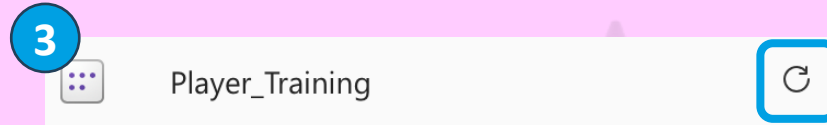
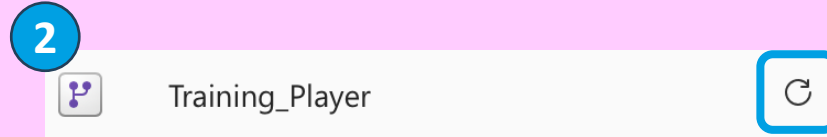
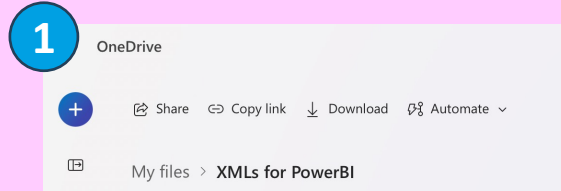
## Connect .pbix file

- 1) Open PowerBI Desktop and load the .pbix template file (template can be requested via support@gis-pax.com)
- 2) Click on "Transform data"
- 3) Select one of the 6 import tables (as shown)
- 4) Click on gear symbol next to Navigation
- 5) Use Navigation pop-up to link table to correct PowerBI Dataflow | Repeat these steps for all 6 tables
- 6) Click "Close & Apply"
- 7) Publish the report to your workspace
- 8) Publish the app and provide access to people within your organization





# How to link Player to PowerBI (VIII)



## Refresh PowerBI

- 1) Replace XMLs with updated versions
- 2) Hover over the dataflow and press the refresh icon
- 3) Refresh the data model  
(alternatively you can also refresh the .pbix file and re-upload it)

PLAYER

# How does it work with Player? (II)



Connect directly to  
your companies SDE  
(if available)

## The "fast and live" way of linking Player and PowerBI

- This workflow can be used by any Player customer with a company internal SDE
- PowerBI will link directly (via a gateway) to the SDE
- Data is updated live or whenever PowerBI is refreshed
- No manual exports are required
- Data loading will be significantly faster than with export tables
- Linking multiple Player projects will require additional work within the PBIX template



### Pros

- Fast and live connection
- No manual export needed
- Enables managers to access prospect volumes and risks via web browser, phone and tablet
- Once data model is in place, data can be updated automatically



### Cons

- Company SDE must be set up
- No review step
- Linking more than one project will result in more export tables as well as in a requirement to adapt the data model every time a project is added



# How does it work with Player? (III)



  
Connect directly to  
Playhouse  
(if licensed)

## THE BEST WAY of linking Player and PowerBI

- This workflow can be used by any Player customer with a Playhouse license
- No data exports are required
- There is no limit in how many Player projects can be linked
- No additional effort is required to link additional projects
- Version control allows tracking of data changes
- Upload of Player projects to Playhouse acts as a review step and ensures data consistency



### Pros

- No additional costs to Player License
- Data can be queried and reviewed prior to upload
- Multiple plays can be displayed simultaneously
- PowerBI can be hosted together with Playhouse online
- Enables managers to access prospect volumes and risks via web browser, phone and tablet
- Data will refresh automatically



### Cons

- Playhouse license required