

**empower!**

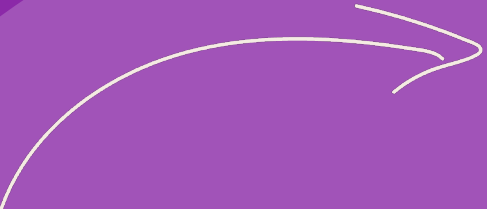
Welcome



Set up your own  
first User-Defined API  
for your  
DataMiner System



YOUR HOST



# Thomas Ghysbrecht



PRINCIPAL DEVOPS ENGINEER



[THOMAS.GHYSBRECHT@SKYLINE.BE](mailto:THOMAS.GHYSBRECHT@SKYLINE.BE)



YOUR HOST

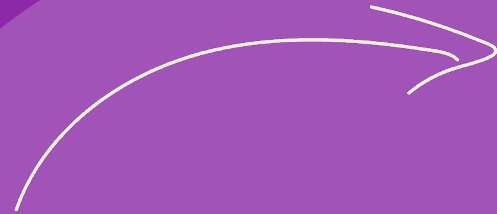
# Emilie Laverge



PRINCIPAL DEVOPS ENGINEER

EMILIE.LAVERGE@SKYLINE.BE

YOUR HOST



# Jarno Lernou

EXPERT HUB LEAD DEPLOYING SOLUTIONS

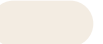
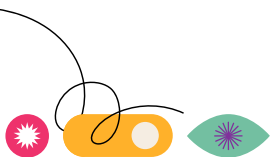


JARNO.LERNOU@SKYLINE.BE

[LinkedIn.com/in/jarno-lernou](https://www.linkedin.com/in/jarno-lernou)

# Agenda

1. Introduction on User-Defined APIs **15 min**
  1. API Token
  2. API Script
  3. API Definition
2. Hands-on exercise **20 min**
3. Performance guide **5 min**
4. DataMiner Documentation **5 min**
5. What's new and coming up? **5 min**



# Goals

Understand the concept of User-Defined APIs.

Know what components a user-defined API consists of.

Create a user-defined API in Cube.

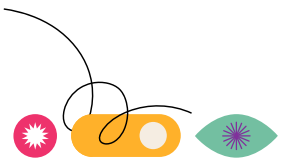
Apply performance best practices when creating a user-defined API.



# Introduction on User-Defined APIs

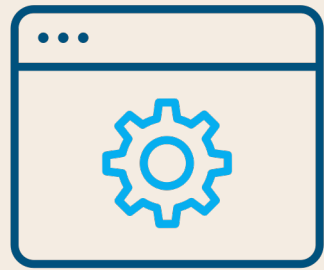
Let's get started!

Understand the  
concept of User-  
Defined APIs.



# User-Defined APIs - Introduction

- Expose **automation script** as an API
- Control access using **tokens**
- Available since 10.3.6



Client

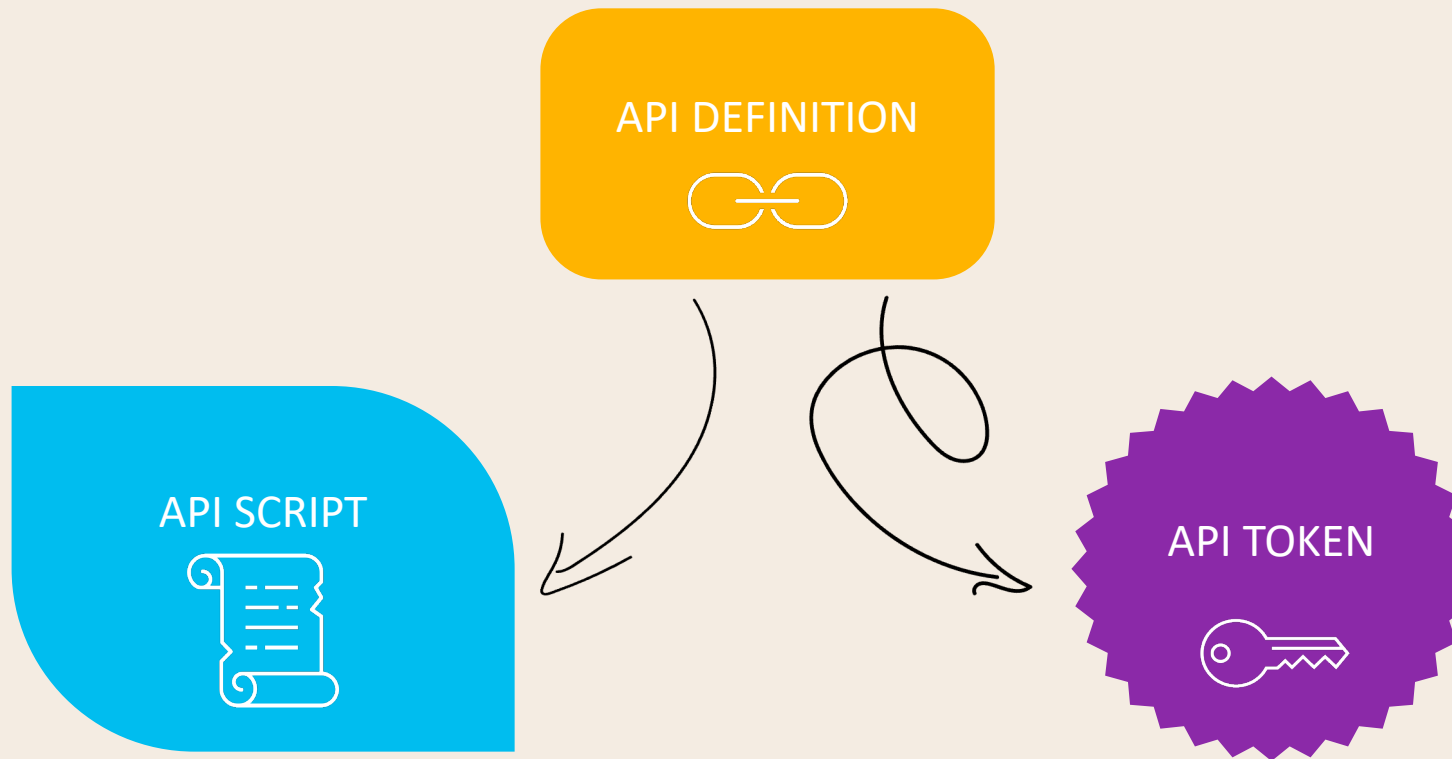


DataMiner



# User-Defined APIs - Introduction

What is a user-defined API?



Know what components a user-defined API consists of.





# User-Defined APIs – Introduction

## API automation script

```
public class Script
{
    public void Run(IEngine engine)
    {
        // Script logic
    }
}
```



```
using Skyline.DataMiner.Automation;
using Skyline.DataMiner.Net.Apps.UserDefinableApis;
using Skyline.DataMiner.Net.Apps.UserDefinableApis.Actions;

public class Script
{
    [AutomationEntryPoint(AutomationEntryPointType.Types.OnApiTrigger)]
    public ApiTriggerOutput OnApiTrigger(IEngine engine, ApiTriggerInput requestData)
    {
        var method = requestData.RequestMethod;
        var route = requestData.Route;
        var body = requestData.RawBody;

        return new ApiTriggerOutput
        {
            ResponseBody = $"Received {method} request for route: '{route}' with body: '{body}'";
            ResponseCode = (int) StatusCode.Ok,
        };
    }
}
```





# User-Defined APIs – Introduction

## API Token



- **Secret:**
  - Must be included with every API request
  - Stored securely in the database
  - Generated according to minimum requirements
  - Can be (temporarily) disabled
- **Name**

A screenshot of a software dialog box titled "Create API token". It contains two input fields: "Name:" with the value "Calculator API - Dev token" and "Secret:" with the value "Q13LusNOXG7XeHTDg0prX3VBHi/ZL8JJ5R7NIXN8F68=". A "Copy" button is next to the secret field. Below the fields is a warning message: "For security reasons, this secret will only be shown now. You will not be able to retrieve it again when you have closed this window." A "Copy and close" button is at the bottom right.

**Create API token**

Name: Calculator API - Dev token

Secret: Q13LusNOXG7XeHTDg0prX3VBHi/ZL8JJ5R7NIXN8F68= Copy

**For security reasons, this secret will only be shown now. You will not be able to retrieve it again when you have closed this window.**

Copy and close



# User-Defined APIs – Introduction

## API Definition

API DEFINITION



- **Script name**
- **Description** (optional)
- **URL route**
- **Token(s)**

**User-defined API**

Script:

Description:

URL:

Method to be executed:  OnApiTrigger method with argument   Run method (no output)

Tokens:


- Demo labs - John Smith (Disabled)
- Example inc. - Jane Doe
- Placeholder Ltd. - HR
- Ziine - John Doe
- Ziine - MCR



# Before we get started!

Allow API access through the cloud

Remote access

- Remote access
- DataMiner Cube (desktop app)
- Web apps
- User-Defined APIs 

Save



<https://<MyDataMiner>-<MyOrganisation>.on.dataminer.services/api/custom/...>



<https://admin.dataminer.services>



# Hands-on time!

1. Go to '**Catalog.dataminer.services**'
2. Search for '**User-Defined API**'
3. Install 'User-Defined APIs Calculator API tutorial'

## DataMiner Catalog

The DataMiner Catalog offers an extensive collection of downloadables created by DataMiner content experts, such as packages, connectors, Automation scripts, Visio files, and more.



### User-Defined API Calculator API tutorial

Application package

Create a user-defined API in Cube.

# Let's get our hands dirty!

The screenshot shows a REST client interface with the following details:

- Method: GET
- URL: `https://dataminer.example.com/api/custom/calculator/add`
- Body tab selected, showing a single line of text: `1,2`
- Response status: 200 OK
- Response format options: Pretty, Raw, Preview, Visualize

A red dashed box highlights the number '3' in the bottom left corner of the interface.

Create a calculator API

# Can't get enough?

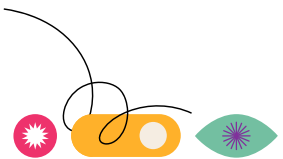


Try the  
advanced  
exercises!

<https://aka.dataminer.services/UDA-Advanced>

# Performance guide

Best practices



# User-Defined APIs – Performance guide

## Best practices

- Protect your DataMiner system:
  - Avoid long operations
  - Large request/response body impact the performance
    - 29MB hard limit
  - Use Data Aggregator for large chunks of data

Apply performance best practices when creating a user-defined API.

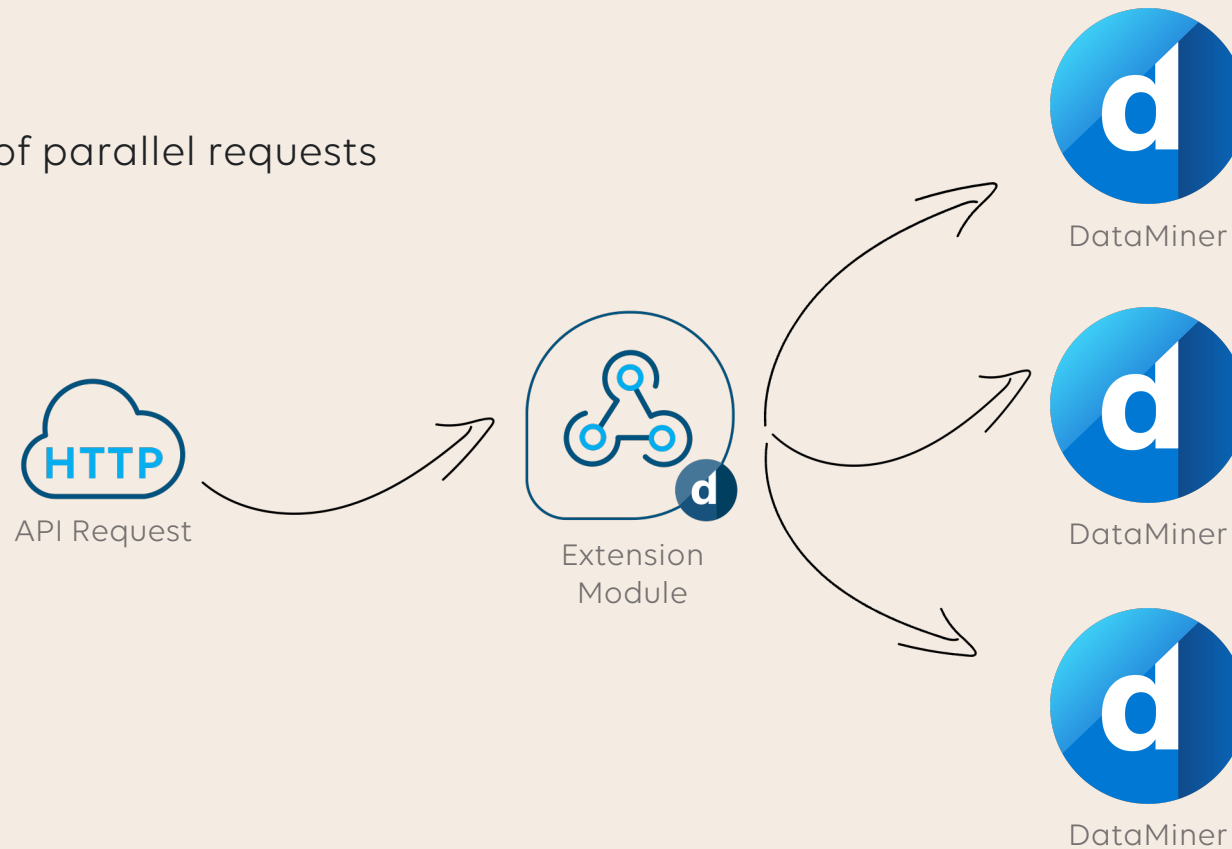




# User-Defined APIs – Performance guide

## Built-in protections

- Load balancing
- Limited amount of parallel requests
- Based on CPU



# User-Defined APIs – Performance guide

## Performance metrics

- Depends on a lot of factors!
  - Internet speed
  - Script logic
  - Hardware
  - Other load
  - ...

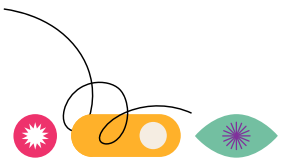


<https://aka.dataminer.services/UDA-Benchmark>



# User-Defined APIs in the Docs

Documentation



# User-Defined APIs - Documentation

## Highlights of User-Defined APIs in the DataMiner docs

- Error codes – <https://aka.dataminer.services/UDA-Errors>
- Troubleshoot - <https://aka.dataminer.services/UDA-Troubleshoot>
- Tutorials - <https://aka.dataminer.services/UDA-Tutorials>



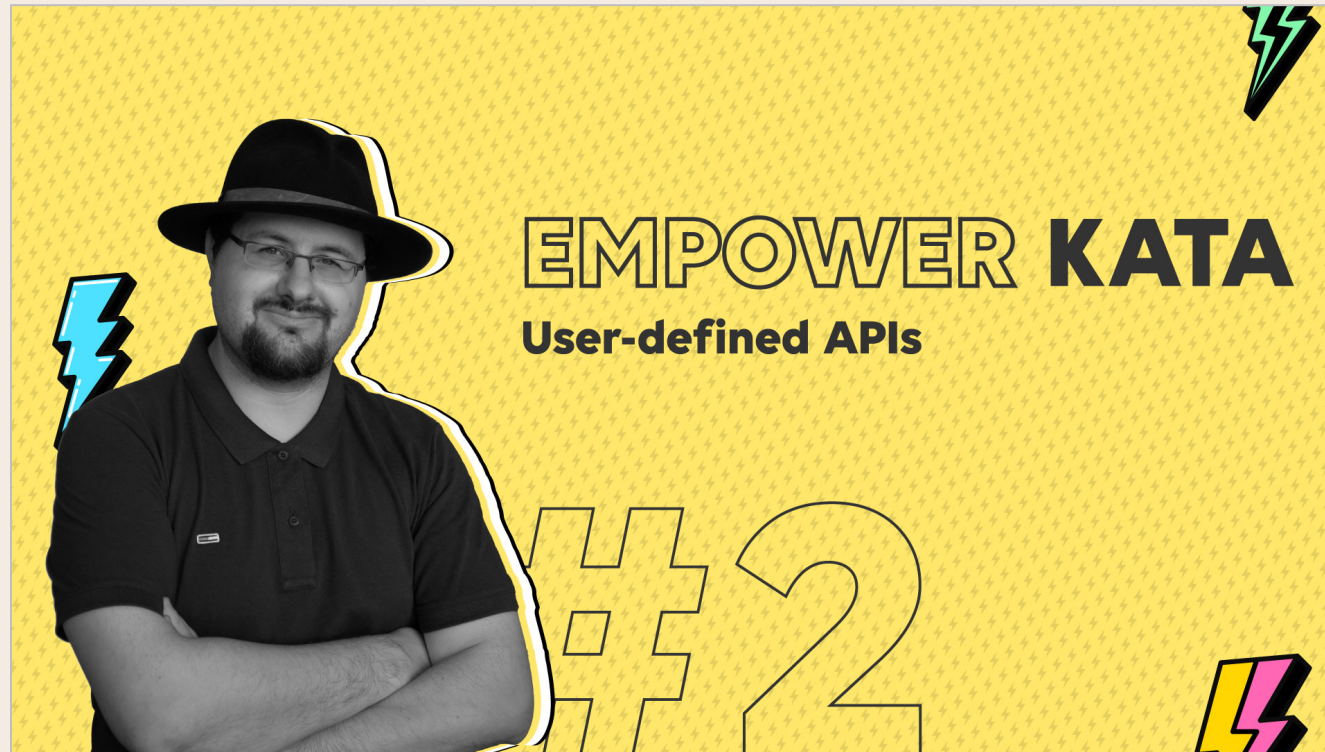
<https://aka.dataminer.services/UDA>



# User-Defined APIs - Documentation

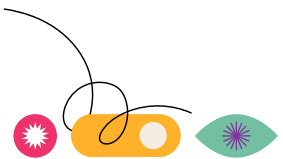
## Empower kata

- <https://community.dataminer.services/courses/kata-2/>



# What's new?

Recent and upcoming exciting updates



# User-Defined APIs – What's new?

## Exciting new features since last Empower

- Token ID is available in API script (10.3.9)

```
public class Script
{
    [AutomationEntryPoint(AutomationEntryPointType.Types.OnApiTrigger)]
    public ApiTriggerOutput OnApiTrigger(IEngine engine, ApiTriggerInput requestData)
    {
        // Guid
        var tokenId = requestData.Context.TokenId

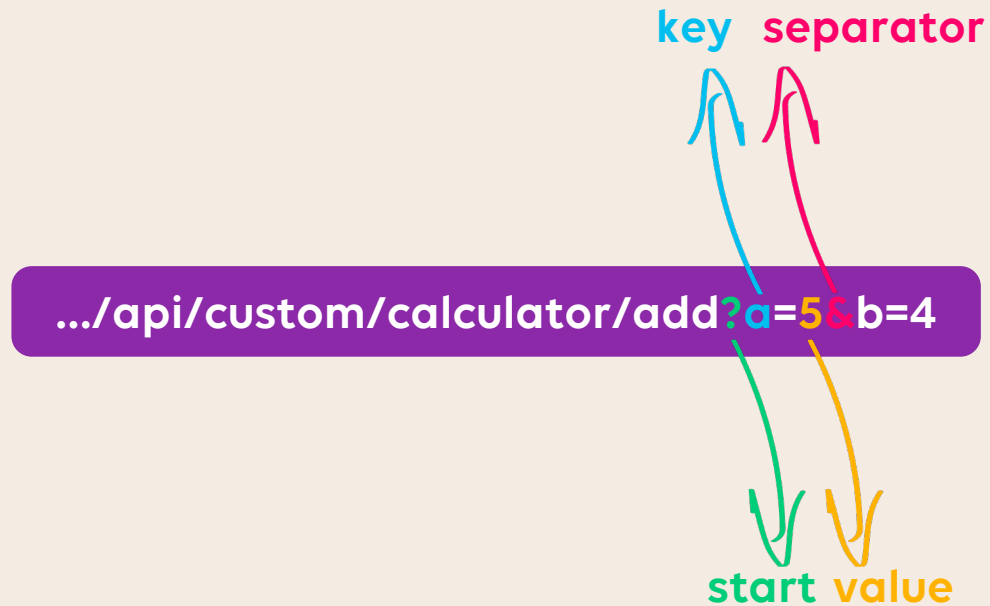
        return new ApiTriggerOutput
        {
            ResponseBody = $"Received {method} request for route: '{route}' with body: '{body}'",
            ResponseCode = (int) StatusCode.Ok,
        };
    }
}
```



# User-Defined APIs – What's new?

## Exciting new features since last Empower

- Query parameters support (10.4.1)





# User-Defined APIs – What's new?

## Exciting new features since last Empower

- Query parameters support (10.4.1)
  - Common use-case: limit

GET	https://dataminer.example.com/api/custom/incidents?limit=10					
Params ●	Authorization ●	Headers (7)	Body	Scripts	Tests	Settings
Query Params						
<input checked="" type="checkbox"/>	Key					Value
<input checked="" type="checkbox"/>	limit					10

```
using Skyline.DataMiner.Automation;
using Skyline.DataMiner.Net.Apps.UserDefinableApis;
using Skyline.DataMiner.Net.Apps.UserDefinableApis.Actions;

public class Script
{
    [AutomationEntryPoint(AutomationEntryPointType.Types.OnApiTrigger)]
    public ApiTriggerOutput OnApiTrigger(IEngine engine, ApiTriggerInput requestData)
    {
        int limit = 20; // Default limit

        if (requestData.QueryParameters.TryGetValue("limit", out var limitString))
        {
            if (int.TryParse(limitString, out var parsedLimit))
            {
                limit = parsedLimit
            }
        }
    }
}
```



# User-Defined APIs – What's new?

## Exciting new features since last Empower

- **Coming soon:**
  - Performance improvement API requests
  - Cube UI real-time updates



# Goals

Understand the concept of User-Defined APIs.

Know what components a user-defined API consists of.

Create a user-defined API in Cube.

Apply performance best practices when creating a user-defined API.




ASK AWAY

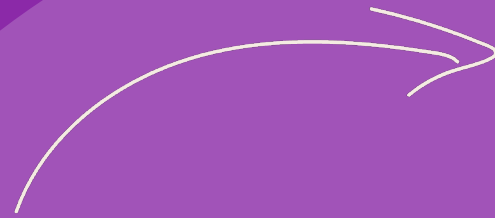
**Questions?**



Unlocking Insights 

Integrating **AI Data** from **DataMiner**  
into your **Dashboards**  
 and Apps

YOUR HOST



Tobe  
Deprez

Senior DevOps Engineer DATA CORE



TOBE.DEPREZ@SKYLINE.BE

AUGMENTED  
OPERATIONS

# AI in DataMiner?

## DataMiner Augmented Operations

- Remember from day 1 "**Mastering AI in Cube**"



Trend  
Forecasting



Anomaly  
Detection



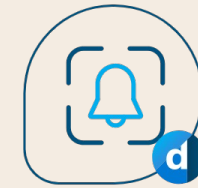
Incident  
Tracking



Proactive Cap  
Detection



Pattern  
Matching



Focus  
Alarms



Relationship  
Learning

- Today: In DataMiner **Dashboards**

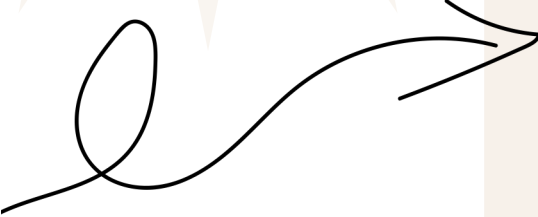


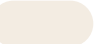
# Agenda



Leverage what you learned at Day 1 in

Mastering DataMiner Cube: Accessing AI-Driven anomalies, relations and patterns

- 
1. Exercise 1: Anomalies
  2. Exercise 2: Trend Patterns
  3. Q & A





# Goals

Leverage Augmented Operations in Dashboards (and Low-code apps).

We can leverage anomalies in dashboards

We can leverage Trend patterns in dashboards

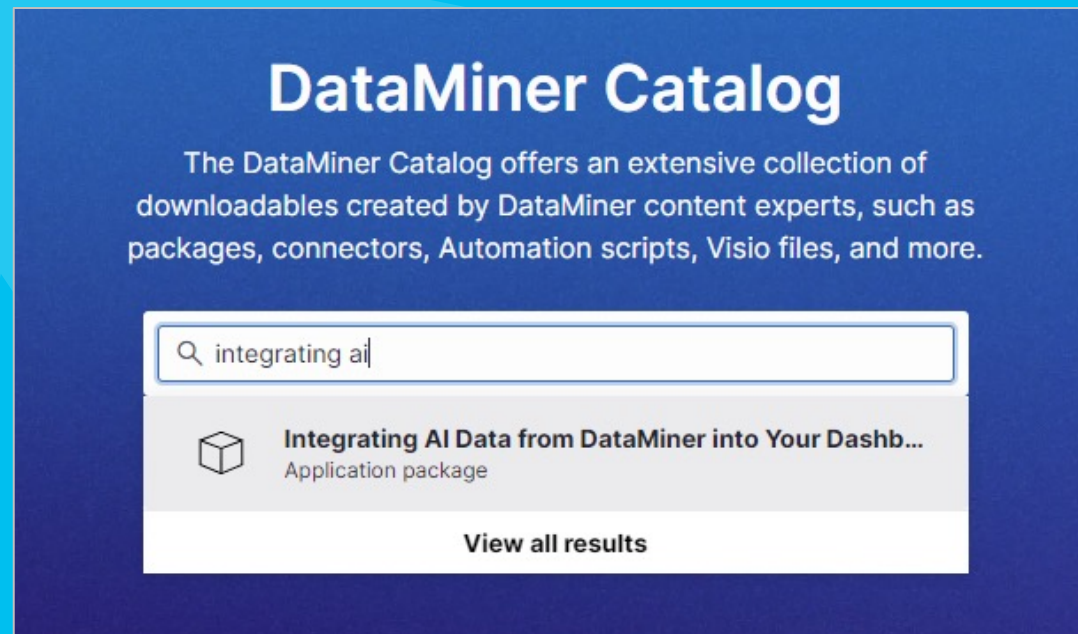
(bonus) We can leverage Time Scoped Relations in dashboards

(bonus) General tips & tricks and applying what we learned yesterday

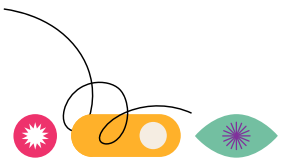


# Hands-on time!

1. Go to '**Catalog.dataminer.services**'
2. Search for '**Integrating ai**'
3. Install 'Integrating AI Data from DataMiner into Your Dashboards and Apps'

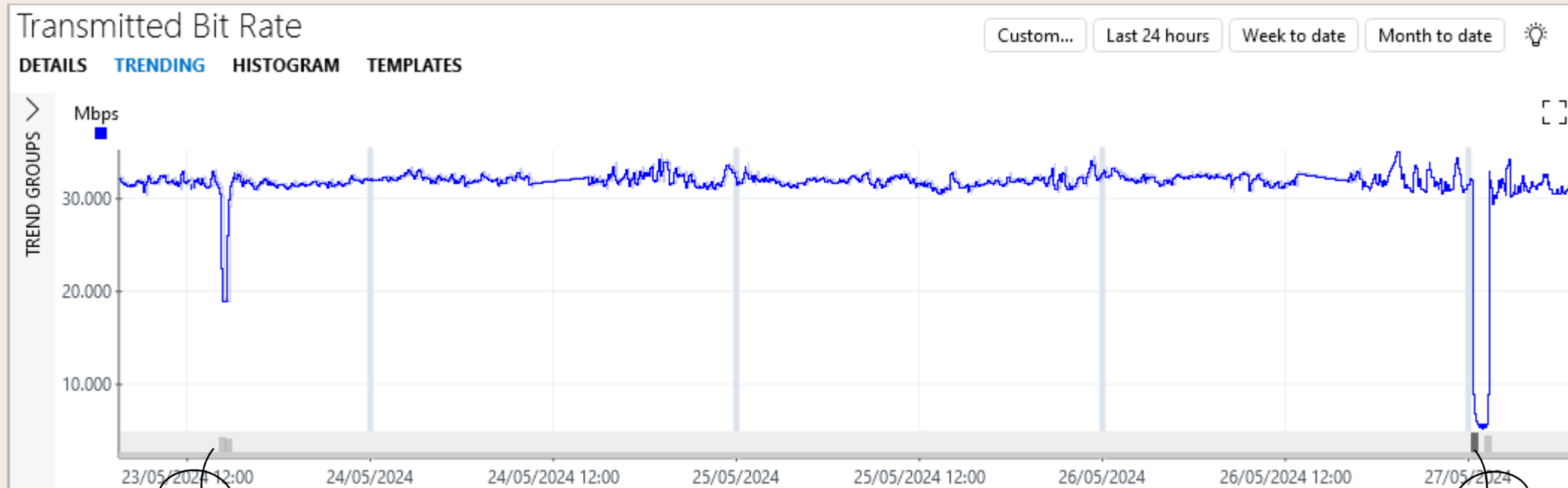


# Exercise 1: Anomalies



# Recap

## Change points vs anomalies



### Change point

Any change in behaviour

Grey square under trend graph

No event

### Anomaly

Only severe / unexpected changes

Black square under trend graph

Suggestion event (or alarm)



# In dashboards and low code apps

## Query data sources

### [Get behavioral change events | DataMiner Docs](#)

By default, the data contains the following columns:

- **Parameter ID:** The ID of the parameter for which the change point was detected.
- **Anomalous:** Whether the change point was marked as an anomaly.
- **Change type:** The type of change point that was detected.
- **Increase:** Whether the detected change point represents an increase (e.g. a level shift up) or a decrease (e.g. a level shift down).
- **Start time:** The detected start time of the change point.
- **End time:** The detected end time of the change point.

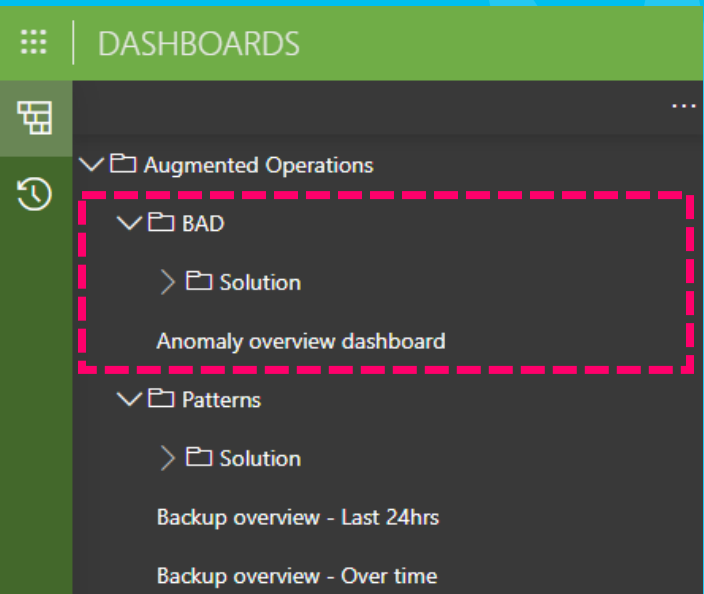
The following columns are also available after a [Select](#) operation:

- **Element ID:** The ID of the element for which the change point was detected.
- **Change Point ID:** The ID of the change point.
- **Start value:** The parameter value at the start of the change point for level shifts and outliers, or the slope or variance at the start of the change point for trend changes or variance changes, respectively.
- **End value:** The parameter value at the end of the change point for level shifts and outliers, or the slope or variance at the end of the change point for trend changes or variance changes, respectively.
- **Significance:** A number indicating how significant the change point is compared to previously detected change points.
- **Severity:** A number indicating the severity of the change point compared to past trend data.
- **Creation time:** The time when the change point was first detected.
- **Last update:** The time when the change point was last updated.

When one or more table rows are selected, the following feeds are available in the *feeds* section of the data pane:

- **Parameters:** The parameters for which the selected change points were detected.
- **Timespans:** The time ranges from the start time to the end time of the selected change points.
- **Elements:** The elements for which the selected change points were detected.
- **Indices:** The primary key of the table rows for which the selected change points were detected, if any.





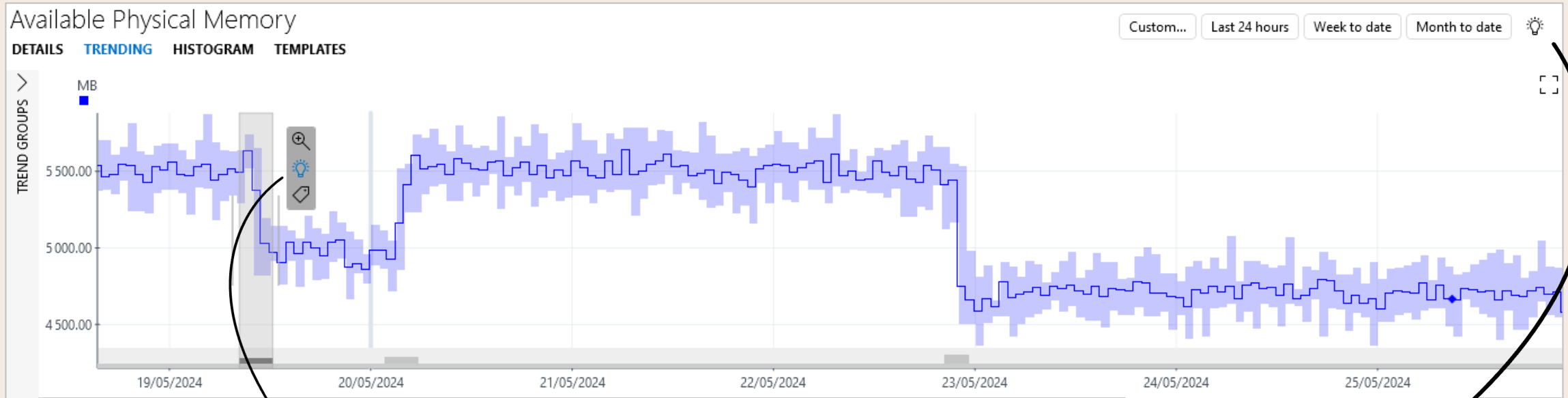
# Let's get our hands dirty!

Behavioral Anomaly Detection exercise(s)

We can leverage anomalies in dashboards

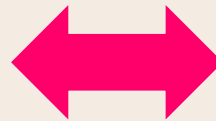
# Recap

## Time scoped relations



**Time scoped relation**

Selection in trend  
Within Element

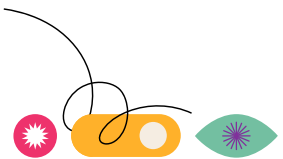


**General relation**

Upon trend loading  
Cross Element



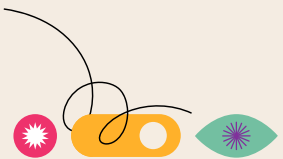
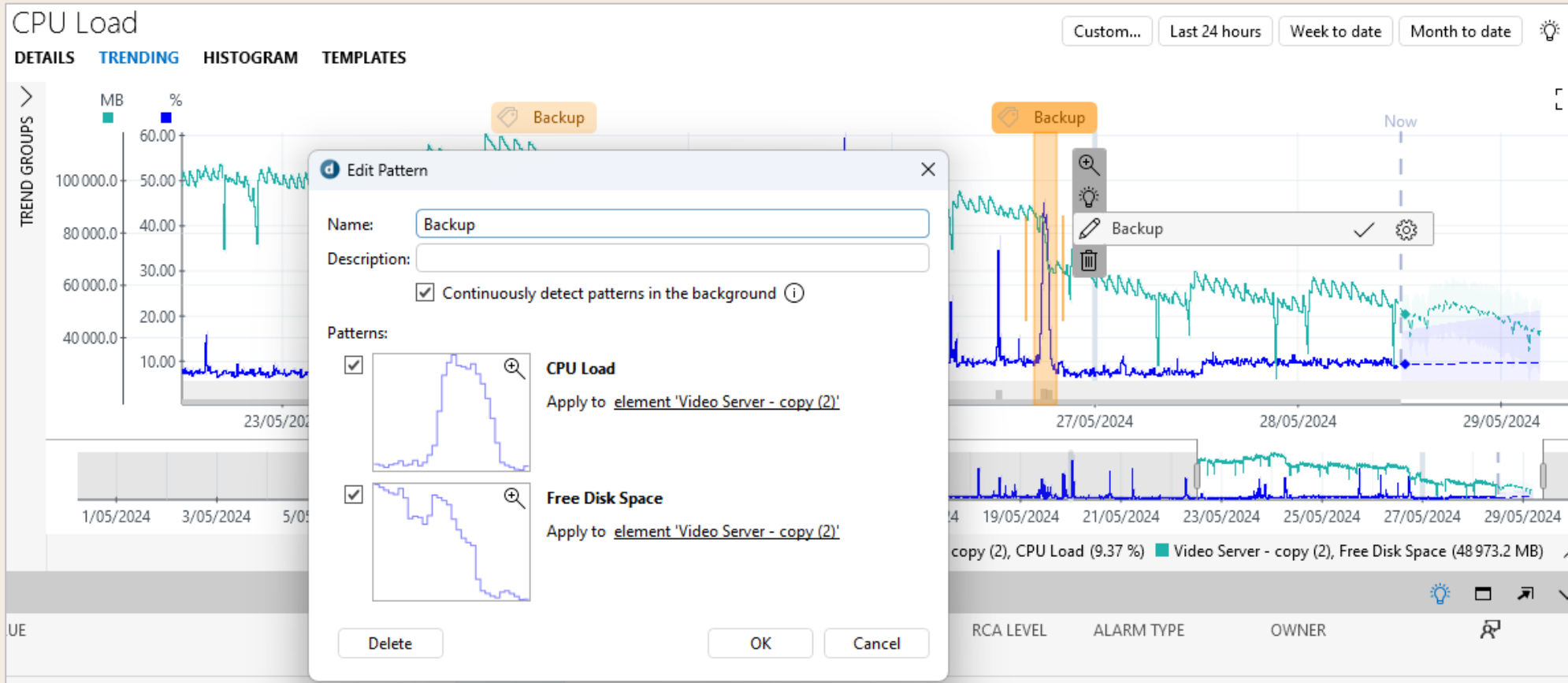
# Exercise 2: Trend patterns





# Recap

## Labelled Trend data patterns

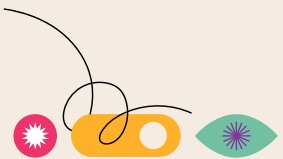


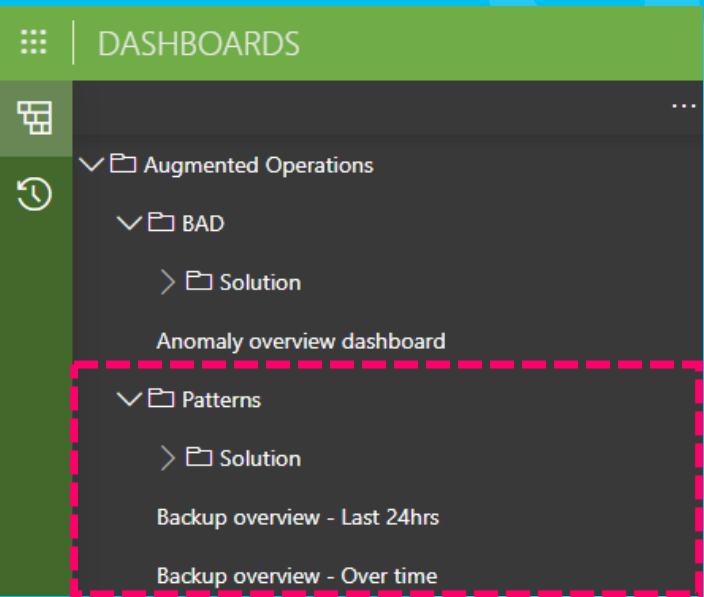
# In dashboards and low code apps

## Query data sources

[Get trend data patterns | DataMiner Docs](#)

[Get trend data pattern events | DataMiner Docs](#)





# Let's get our hands dirty!

Trend patterns exercise(s)

We can leverage  
Trend patterns  
in dashboards

ASK AWAY

# Questions?

(bonus) General tips  
& tricks and  
applying what we  
learned on  
tuesday



# References



documentation

[DataMiner Augmented Operations | DataMiner Overview](#)

[Analytics Tutorials | DataMiner Tutorials](#)

[DataMiner KATAs | Bringing the Thunder](#)



demo

[Empower 2024 AI | DataMiner Catalog](#)



[Ziine Demo System](#)



feedback

Reach out to us via [Questions | DataMiner Dojo](#), [Feature Suggestions | DataMiner Dojo](#), or by sending us an email at [ai@skyline.be](mailto:ai@skyline.be)



Low-code apps   
 Core Concepts

YOUR HOST



# Sebastiaan Dumoulein



PRODUCT OWNER DATA EXPLORATION



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VISUAL OVERVIEW  
DASHBOARDS  
LOW-CODE APPS  
GQI

# Agenda



1. What are Low-Code Apps?
2. Core concepts
  - I. Feeds
  - II. Events
  - III. Actions
3. How it works together





# Goals

We understand  
the core concepts

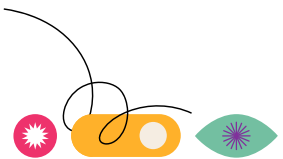
We know how to  
configure the core  
concepts.

We can apply  
them in a  
combined manner



# What are Low-Code Apps?

No-Code, Low-Code or A-Lot-Of-Code



# What are Low-Code Apps?

- An ideal **DevOps** tool
- **Build – Deploy – Use** in minutes
- Should resolve a use case
- Creates an **isolated context**
- Extension on Dashboards

The image displays three screenshots of low-code application interfaces. The top-left screenshot, titled "CONTROL SURFACE", shows a grid of source levels including MCR, Studio, and various camera and microphone feeds. The top-right screenshot, titled "Job info", shows a job status flow (Confirmed, Running, Completed, Ready For Invoice, Invoiced) and details for a job named "Six Nations Rugby-- England vs Ireland". The bottom screenshot, titled "Resource Pools", shows a table of resource pools with columns for Name, State, and Domain.

RESOURCE POOL NAME	RESOURCE NAME	RESOURCE SELECT STATE	ACTIONS
IRDs	LON RX8200-024	✓	🗑️

NAME	STATE	DOMAIN
A/V Processors	Complete	
Audio Processors	Complete	
Cameras	Complete	
Decoders	Complete	
Demodulators	Complete	
Firewalls	Complete	
IP Transcoders	Complete	
IRDs	Complete	



# What are Low-Code Apps?

## Dashboards

- Any data source
- Catalog of visual components
- One page
- Focus on monitoring & reporting
- Limited in actions and events
- Live sharing
- Export to PDF/Email
- No versioning
- Available in the Dashboards app

VS

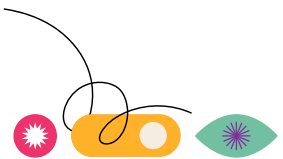
## Low-code apps

- Any data source
- Catalog of visual components
- Multiple pages and collapsible panels
- Focus on interaction
- Access to all actions and events
- Live sharing is on the roadmap
- No export to PDF/Email
- Versioning
- Available on the home page



# Core concepts - Feeds

Feed me the knowledge!



# Feeds

## What is it?

- Represent an active state of the application
- Contains necessary value(s)
- Updates in real-time

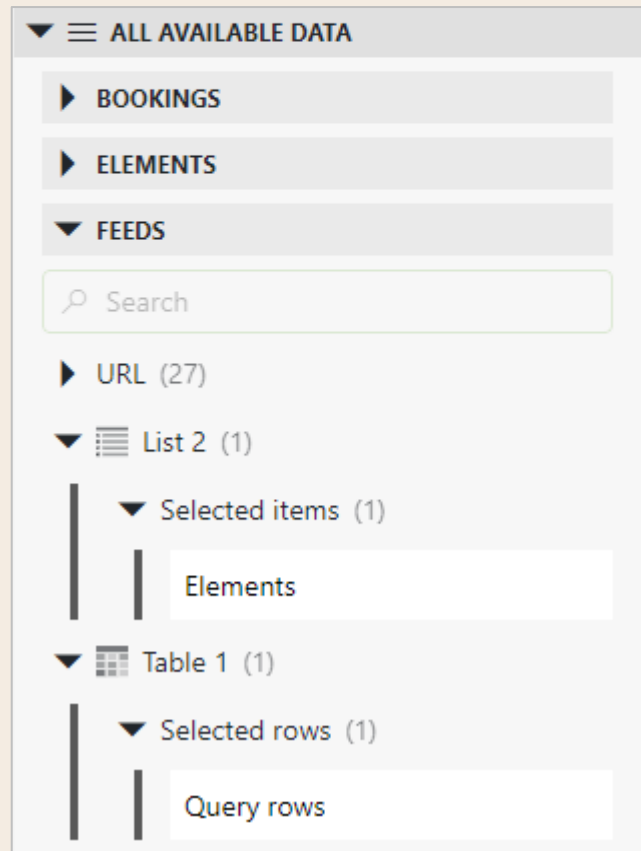
## Examples:

- Selected items of a table
- View port of a line chart
- Filled in text of a text input



# Feeds

Where can I find them?



# Feeds

## How can I use them?

- Whenever you see the 'Link to feed' icon.

The screenshot shows a configuration window for a feed named "KATAs". The "Name" field contains "KATAs". The feed is configured to "Get ad hoc data from JSON Reader" where the file is "KATAs\KATAs.json". A filter is applied to the "Views" column with the method "greater than". The "Value" field is currently empty and contains the placeholder text "Enter a value". A small link icon is visible in the bottom right corner of the "Value" field.



The "Link to" dialog box is shown with the following settings: "Feed" is set to "Current view / Numeric input", "Type" is "Numbers", and "Property" is "Value". Under "Empty feed shows", the "nothing" option is selected. The dialog includes "Cancel" and "Apply" buttons.





# Feeds

## How can I use them?

- Whenever there is intellisense on the input.

URL

URL

Component

Length: 16:29

DATA LAYOUT SETTINGS

GENERAL

Type

Webpage

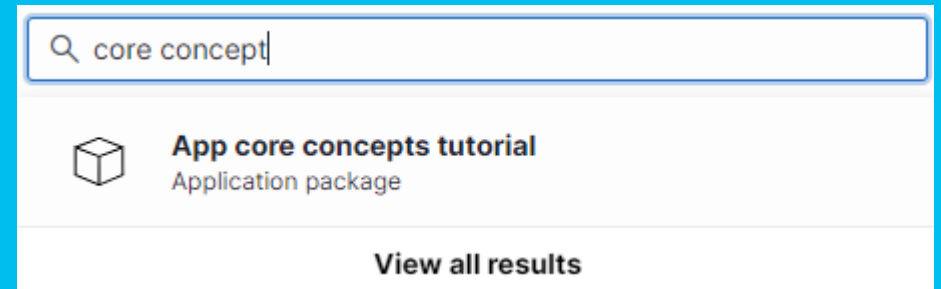
URL

https://www.youtube.com/embed/

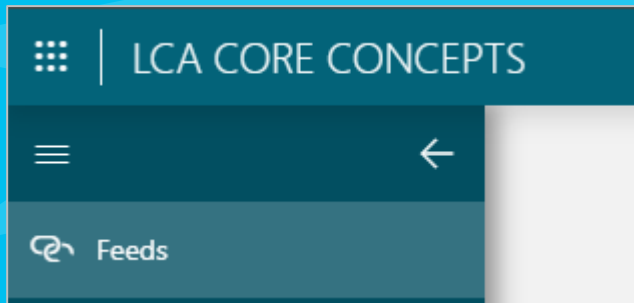


# Deploy the exercise app

1. Go to '**Catalog.dataminer.services**'
2. Search for '**core concepts**'
3. Install '**App core concepts tutorial**'



# Let's get our hands dirty!



We understand  
the core concepts.

We know how to  
configure the core  
concepts.

# Core concepts - Events

**Something is happening!**



# Events

## What is it?

- Represents something that happens
- It's volatile and does not have an active state
- Serves as a trigger for actions

## Examples:

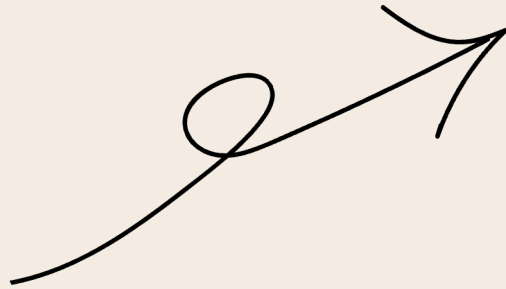
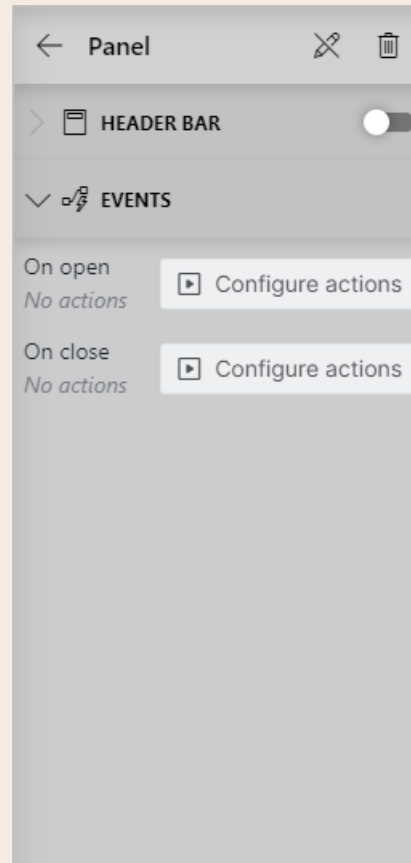
- Upon clicking a button
- Upon opening a panel
- Upon resizing a timeline item



# Events

## Where can I find them?

Application events for pages and panels,



# Events

## Where can I find them?

Components events

### Button

Component

DATA LAYOUT **SETTINGS**

▶ WEBSOCKET SETTINGS

▼ GENERAL

On click  
No actions

▶ Configure actions

### Table

Component

DATA LAYOUT **SETTINGS**

▶ WEBSOCKET SETTINGS

▶ GENERAL

▶ DATA RETRIEVAL

▼ ACTIONS

On double click  
No actions

▶ Configure actions

▶ INITIAL SELECTION

### Timeline

Component

DATA LAYOUT **SETTINGS**

▶ WEBSOCKET SETTINGS

▶ GENERAL

▶ DATA RETRIEVAL

▼ EVENTS

On range select  
Not configured

▶ Configure actions

▼ Bookings

On item resize  
Not configured

▶ Configure actions

On item move  
Not configured

▶ Configure actions

On group change  
Not configured

▶ Configure actions

▶ HIGHLIGHT RANGE



# Events

## Where can I find them?

Template editor

The screenshot shows the 'Template editor' window. On the left, there are 'LAYERS' and 'TOOLS' tabs. Under 'TOOLS', there are buttons for 'Icon', 'Text', 'Rectangle', and 'Ellipse'. The main canvas shows a rectangle with a dashed border and a light gray fill, with the text 'Or' next to it. On the right, there are panels for 'Dimensions', 'Properties', and 'Conditional cases'. The 'Dimensions' panel shows width and height settings. The 'Properties' panel has a 'Show rectangle' checkbox checked and a color picker set to '#CDCCCC'. The 'Conditional cases' panel has an 'Add case' button. A black box highlights the 'On click' event configuration, which shows 'No actions' and a 'Configure actions' button. A hand-drawn arrow points from the bottom of the canvas towards the 'Configure actions' button.

Template editor

LAYERS TOOLS

Icon Text Rectangle

Ellipse

Dimensions

↔ 56 px ↕ 31 px

⌵ 29 px ⌴ 68 px

⌵ 39 px ⌴ 161 px

Properties

Show rectangle

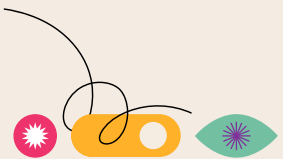
#CDCCCC 0 px

On click  
No actions [Configure actions](#)

Conditional cases

+ Add case

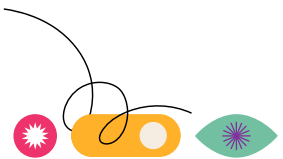
Save Cancel





# Core concepts - Actions

Tell me what to do!



# What are actions?

## What is it?

- Identifies something that should happen
- Different actions can be run sequentially or in parallel
- Are called by an event
- Can be exposed by a component

### Examples:

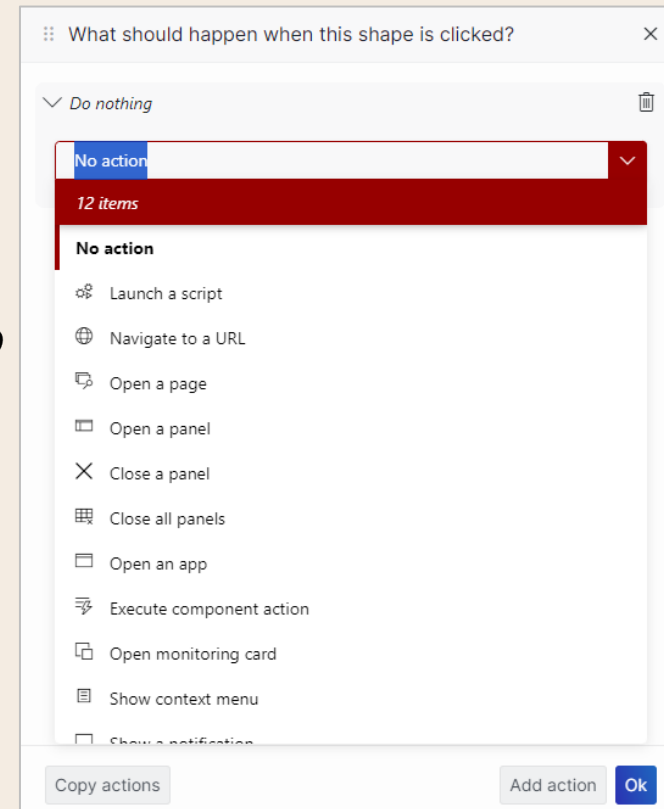
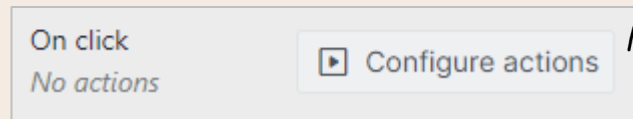
- Launch a script
- Open a panel
- Show a notification



# Actions

## Where can I find them?

- Everywhere an event is defined
- Configuring actions will open the 'Action editor'



# Actions

## How can I use them?

Follow the action configuration

Can be run in sequence or simultaneous

### One after another

☰ What should happen when this shape is clicked? ✕

- > *Open popup 'Solution Basics'* + 🗑️
- > *Launch Fetch the data* + 🗑️
- > *Launch 'LCA Workbook actions'* + 🗑️

### In parallel

☰ What should happen when this shape is clicked? ✕

- > *Open popup 'Solution Basics'* + 🗑️
- > *Launch Fetch the data* + 🗑️
- > *Launch 'LCA Workbook actions'* + 🗑️



# Actions

## What are component actions?



### Table

Clear **selection**

**Fetch** the data

**Select** an item



### Form

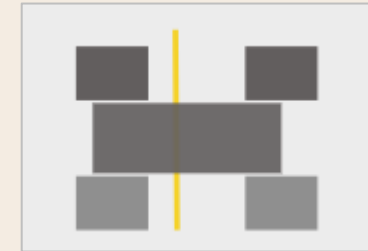
**Cancel** current changes

**Create** a new instance

**Delete** instance

**Save** current changes

Set form to **edit/read mode**



### Timeline

**Clear** highlights

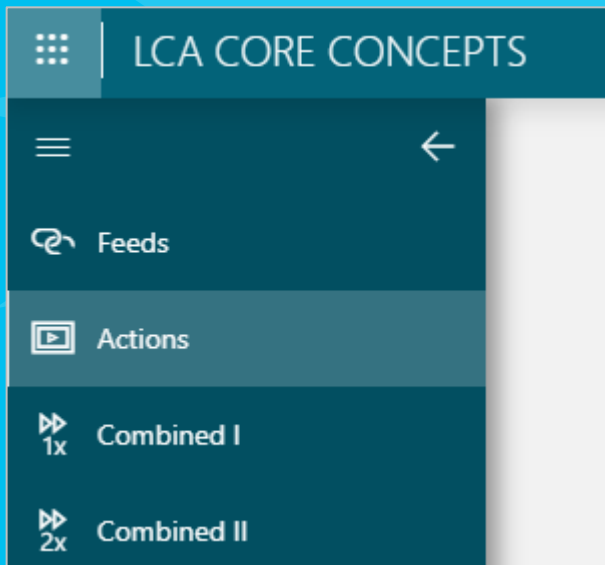
**Fetch** the data

**Highlight** time range

Set **viewport**



# Let's get our hands dirty!



We understand  
the core concepts

We know how to  
configure the core  
concepts.

We can apply  
them in a  
combined manner

ASK AWAY

**Questions?**



Using the maps component

Visualize   
geographical data  
on an interactive map 

Using the maps component



YOUR HOST



Wim  
Bruynooghe

DATA EXPLORATION

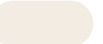
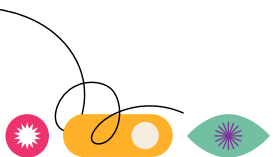
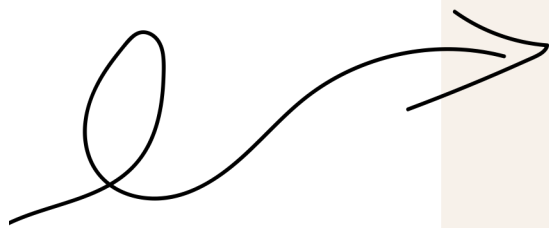


WIM.BRUYNOOGHE@SKYLINE.BE

# Agenda



1. What is the maps component?
2. Visualizing markers
3. Configuring the map
4. Grouping markers
5. Navigation shortcuts
6. Connecting markers
7. Displaying overlays

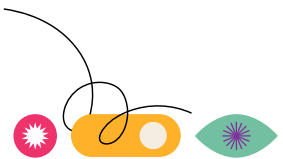


# Goals

We can display markers on a map

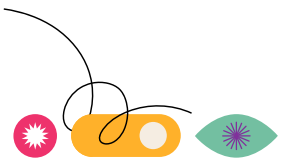
We can use actions to quickly navigate the map

We can display lines on a map



# What is the maps component?

Never get lost again

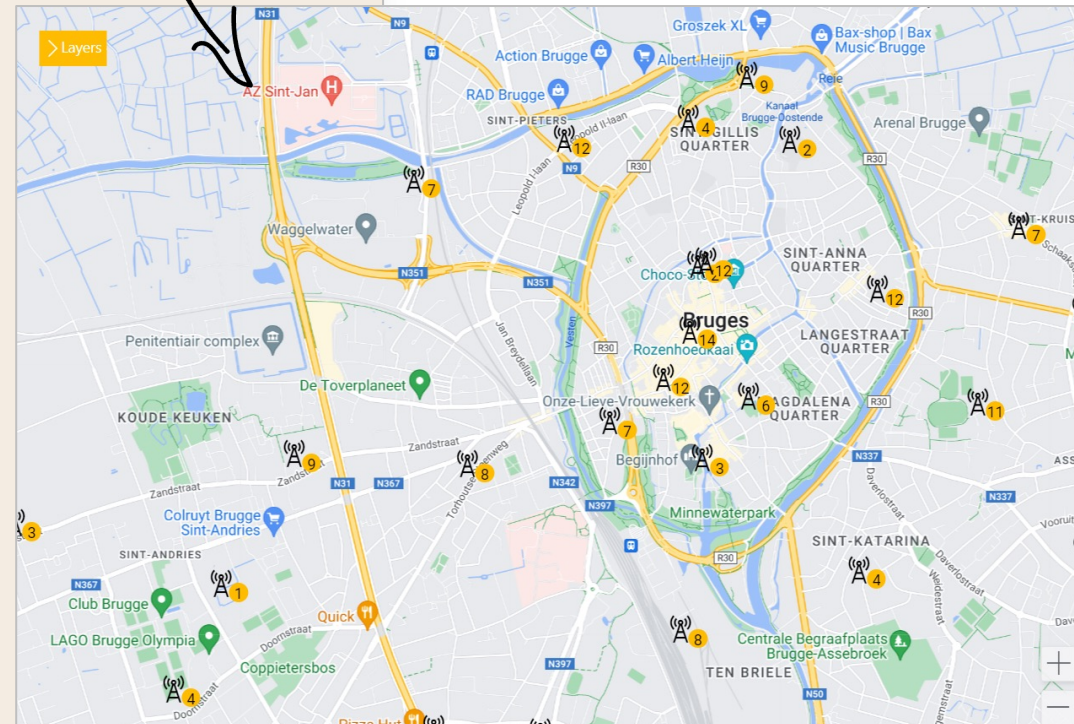


# What is the maps component?

## Never get lost again

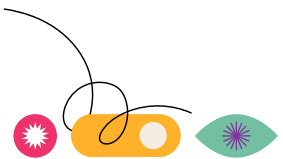
- Dashboards & Low Code Apps component
- Visualizes GQL rows
  - Markers
  - Lines
- Visualizes overlays
  - KML and KMZ
  - GeoJSON
- Requires a Google Maps API key
- *To be released soon* (currently uses the ReportsAndDashboardsGQIMaps soft-launch option)

TOWER ID	LATITUDE	LONGITUDE	TRANSCIVERS	SOURCE
5699	51.1825271626786	3.09326655940459	10	0
25699	51.1826590590674	3.09397568721958	3	5699
5529	51.176321971176	3.13300473058391	9	5699
5797	51.1929758149069	3.14153826913328	5	5529
5530	51.1924758412782	3.06699162449558	8	5699
5662	51.2229309564829	3.06790439920528	3	5530
			3	5833



# Visualizing markers

X marks the spot



# Visualizing markers

## X marks the spot

- Layers
- 3 Columns
  - Identifier
  - Latitude
  - Longitude
- Weights

Text

Numeric

The screenshot shows a map application interface for a layer titled "Cell towers (1 query)". The interface includes a "Weight" field set to 1, a "Cell towers" section with a radio button, and three columns: "Identifier" (Tower ID), "Latitude" (Latitude), and "Longitude" (Longitude). A "Template" section shows a cell tower icon with a yellow dot and an "Edit" button. At the bottom, there is an "Advanced settings" link. Handwritten annotations include a pink box labeled "Text" with an arrow pointing to the "Tower ID" field, a pink box labeled "Numeric" with an arrow pointing to the "Longitude" field, and a circle around the "Cell towers" radio button.



# Customizing the look

X marks the spot

Template

- Configurable shapes
- Conditions
- Actions

The image shows a software interface for customizing a map template. It features a 'Template editor' window at the top right and a 'Cell towers (1 query)' configuration panel in the foreground. The configuration panel includes fields for 'Weight' (set to 1), 'Cell towers' (with a radio button), and three input fields for 'Identifier' (Tower ID), 'Latitude', and 'Longitude'. Below these is a 'Template' preview area showing a cell tower icon with a yellow circle, and an 'Edit' button circled in black. At the bottom of the configuration panel is an 'Advanced settings' link. The 'Template editor' window in the background shows a 'LAYERS' panel with a cell tower layer selected, a central map area with a cell tower icon, and a 'Properties' panel on the right with various settings like 'Show text', font size (14), and color (#000000).





# Hands-on time!

- Go to '[catalog.dataminer.services](https://catalog.dataminer.services)'
- Search for '**app maps**'
- Install the '**App Maps tutorial**'

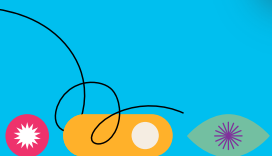
## DataMiner Catalog

The DataMiner Catalog offers an extensive collection of downloadables created by DataMiner content experts, such as packages, connectors, Automation scripts, Visio files, and more.

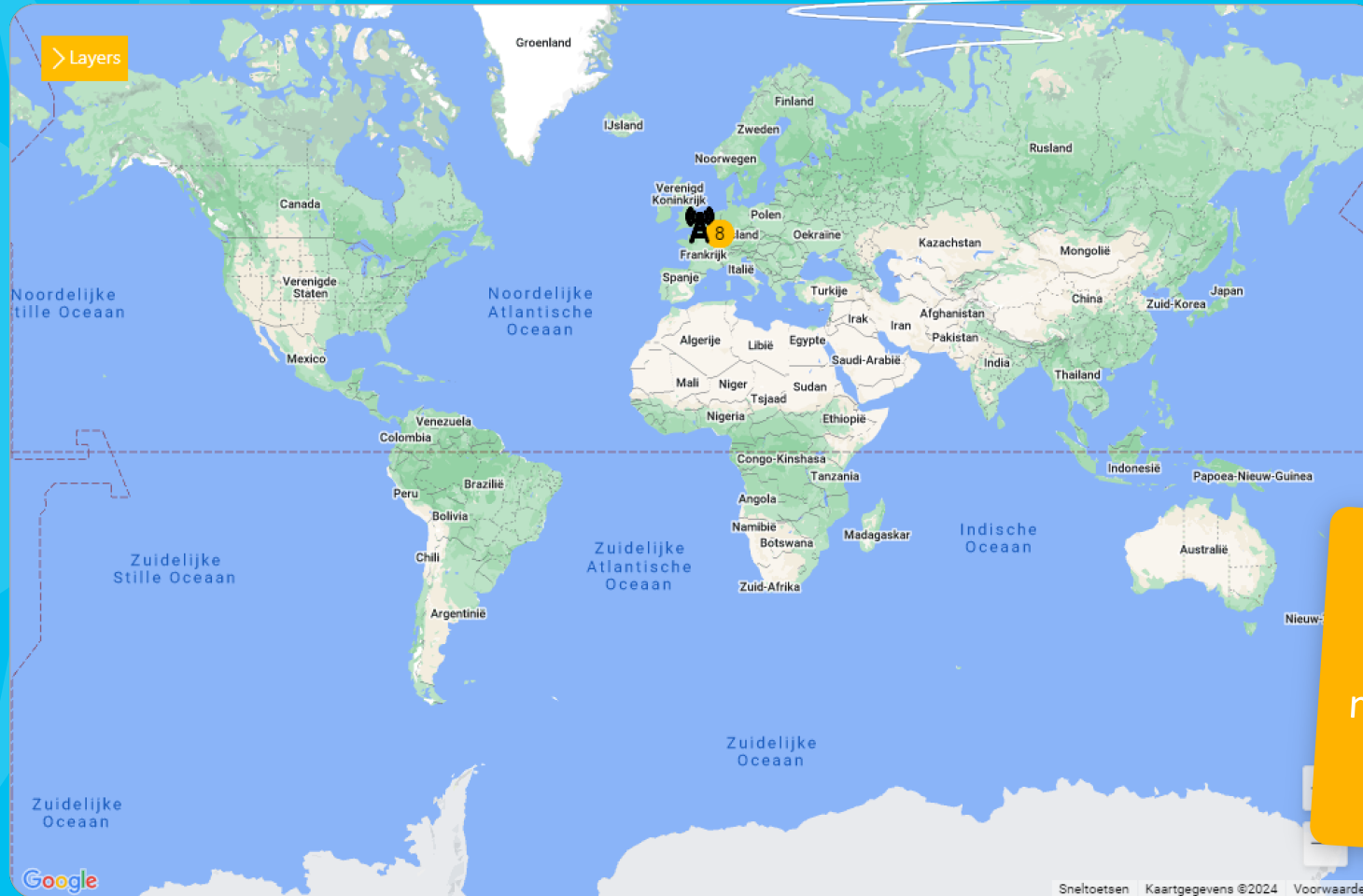
[Browse catalog](#)

**App Maps tutorial**  
Application package

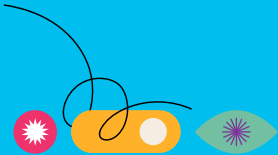
[View all results](#)



# Let's get our hands dirty!

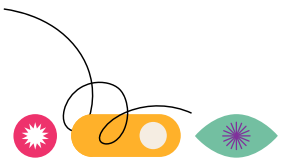


We can display markers on a map



# Configuring the map

Keep the focus centered



# Configuring the map

## Keep the focus centered

- Default values
  - Zoom
  - Center
- Min & max zoom
- Viewport bounds
- Map type

MAP SETTINGS

Save current view

MAP CENTER

Latitude

51.197404439226545

Longitude

3.1469458982470355

MAP ZOOM

Zoom range

50 100

Default zoom

50

MAP BOUNDS

Enable bounds

North

52

East

3.8

South

50.5

West

2.6

DEFAULT MAP TYPE

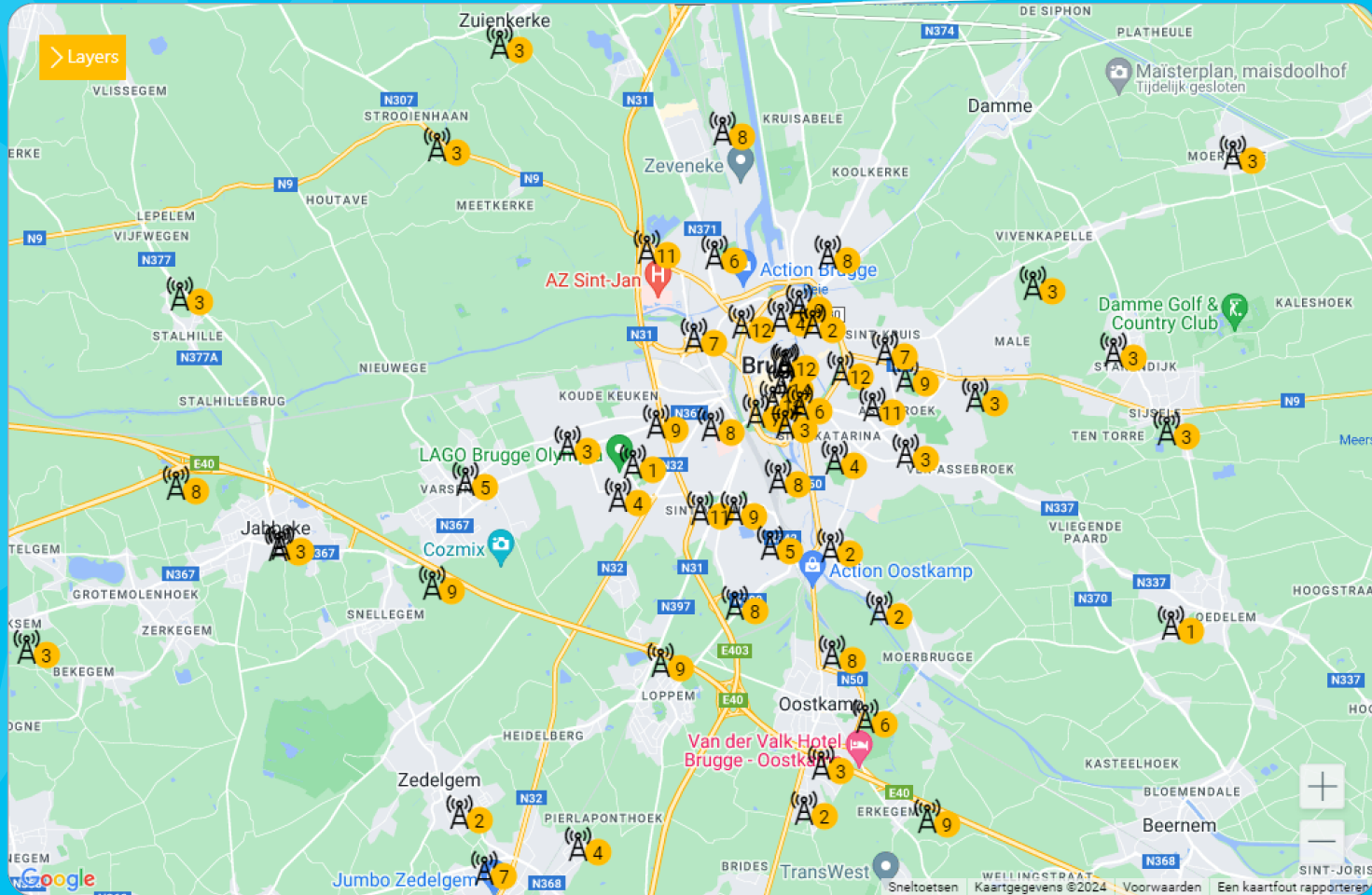
Map type

Roadmap <

Show map type control

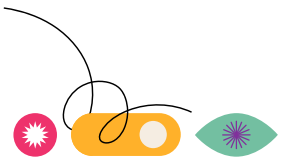


# Let's get our hands dirty!



# Grouping markers

Visualize your data as granular as you want

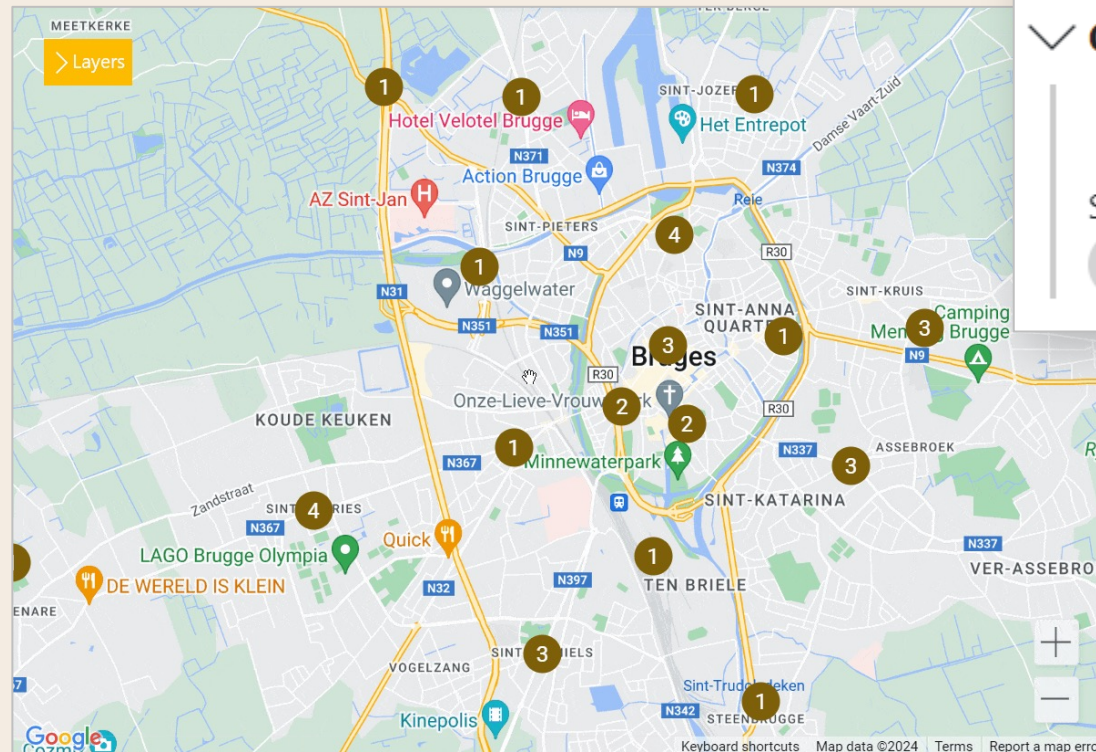




# Grouping markers

## Visualize your data as granular as you want

- No automatic grouping
- Visibility can be configured based on zoom level



✓ **Cell towers**

✓ Advanced settings

Show in zoom level

60  100

✓ **Cell tower groups**

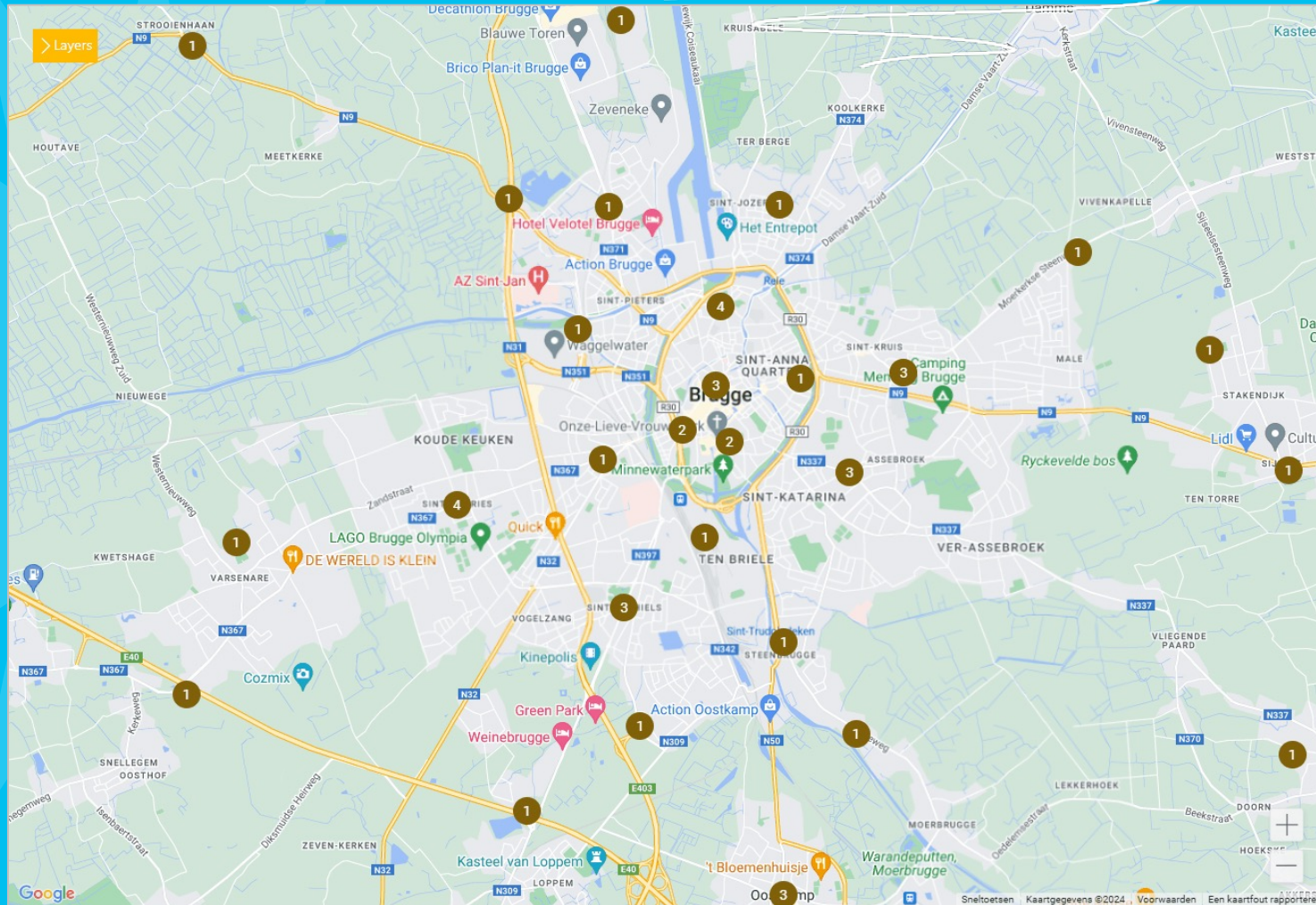
✓ Advanced settings

Show in zoom level

52  60



# Let's get our hands dirty!





# Navigation shortcuts

We can teleport now



# Navigation shortcuts Advanced!

We can teleport now

Component actions used for quick navigation

- Pan to view
- Set zoom level

Both actions can be linked to feeds

The image shows two screenshots of a configuration interface for navigation actions. The top screenshot is for 'Launch Pan to view' and the bottom screenshot is for 'Launch Set zoom level'. Both screenshots show a sequence of actions to be performed, with options for which map to use and a zoom level.

**Launch Pan to view**

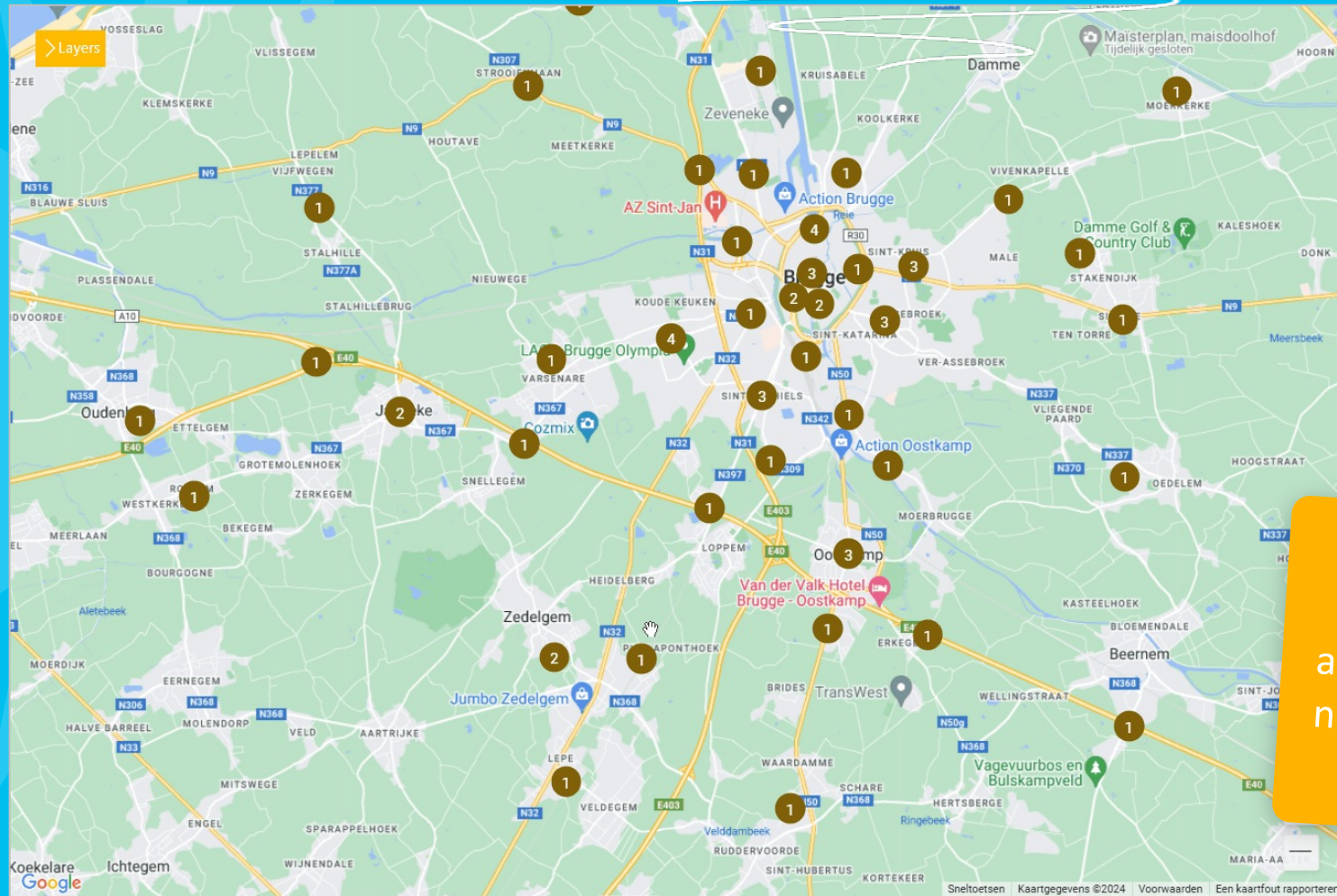
- Execute component action
- I want to: Pan to view
- Which maps?: Maps 1
- Latitude: 0
- Longitude: 0
- + Upon completion

**Launch Set zoom level**

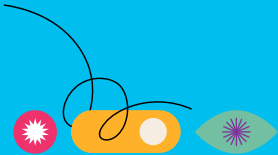
- Execute component action
- I want to: Set zoom level
- Which maps?: Maps 1
- Zoom level: 0
- + Upon completion



# Let's get our hands dirty!

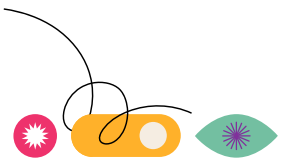


We can use actions to quickly navigate the map



# Connecting markers

It's all connected



# Connecting markers

Advanced!

It's all connected

Independent of markers

5 Columns

- Identifier
- Source & destination latitude
- Source & destination longitude

Styling

- Color
- Width
- ...

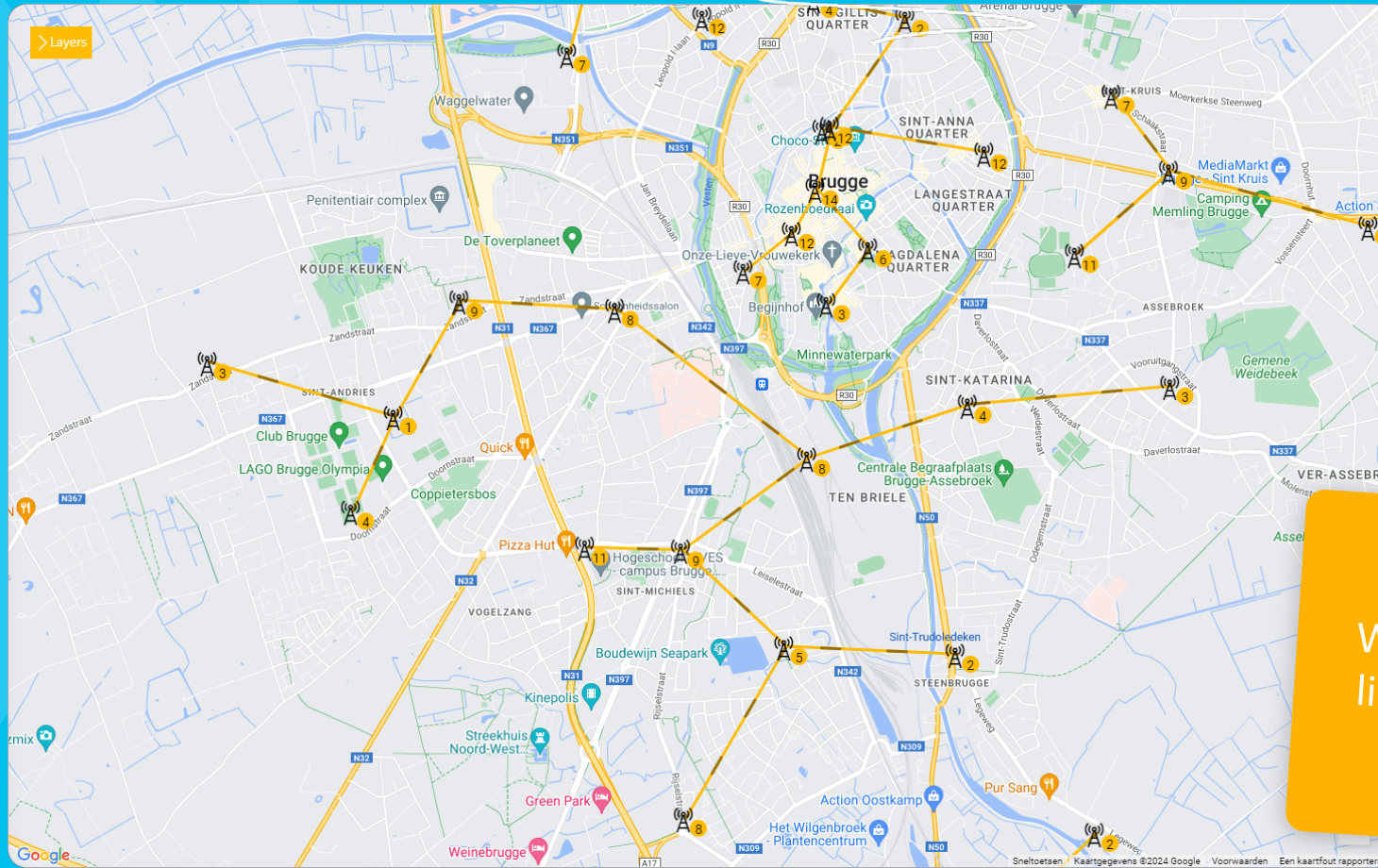
Text

Numeric

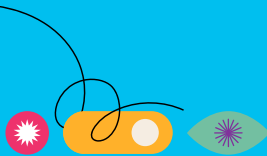
The screenshot shows a settings panel for 'Connections (1 query)'. At the top, there is a 'Weight' field with the value '2'. Below it is a 'Connections' section with a dropdown arrow circled in black. The section contains several fields: 'Identifier' (set to 'Connection ID'), 'Source Latitude' (set to 'Latitude'), 'Source Longitude' (set to 'Longitude'), 'Destination Latitude' (set to 'Latitude (2)'), and 'Destination Longitude' (set to 'Longitude (2)'). At the bottom, there are 'Style' and 'Advanced settings' options. Handwritten arrows point from the 'Text' and 'Numeric' labels to the 'Connection ID' and 'Latitude (2)' fields respectively. A vertical line is drawn next to the 'Source' and 'Destination' sections.



# Let's get our hands dirty!

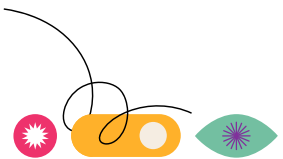


We can display lines on a map



# Displaying overlays

Tattooing the map



# Displaying overlays

Advanced!

## Tattooing the map

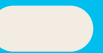
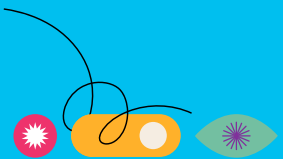
- Different types
  - KML and KMZ
  - GeoJSON
- Component actions
  - Open overlay
  - Close (all) overlay(s)
  - Toggle overlay
- Overlay files
  - Hosted publicly
  - Behind secured public endpoint on DMA

The screenshot shows a configuration panel for a 'Launch Toggle overlay' component. It includes a dropdown menu for 'Execute component action', a section 'I want to' with a dropdown for 'Maps, Toggle overlay', a section 'Which maps?' with a dropdown for 'Maps 1', and a 'Source' field containing 'KMLs/CellTowersCoverage.kml'. A '+ Upon completion' button is visible at the bottom right.





Let's get our hands dirty!



ASK AWAY

**Questions?**



Time to put it all together

and make a



real-world example

YOUR HOST



# Toon Casteele



VISUAL OVERVIEW  
TRENDING

AGILE COACH DATA EXPLORATION & CORE



[TOON.CASTEELE@SKYLINE.BE](mailto:TOON.CASTEELE@SKYLINE.BE)

EVENT ADMINISTRATION

## Events

Overview of all events

ziine

Event Group: Laver Cup 2023

May 30, 2019 10:38 - May 30 10:38

Last 5 minutes Last 15 minutes Last hour Last 24 hours Last 7 days Last 30 days Last year

Jun 29 2020 Sep 27 2021 Dec 25 2022 Mar 24 2024

EVENT ADMINISTRATION

## Events

Overview of all events

ziine

May 30, 2009 10:37 - May 30 10:37

Today This week Last hour Last 24 hours Last 7 days Last 30 days Next month Next 2 years

Active (0) [toggle]

EVENT NAME	START TIME	STOP TIME	STATE
Football	2/1/2024 12:40:00 PM	2/11/2024 10:30:00 AM	Customer Draft

Event name: Filter

Start time: no lower b... and no upper b...

Stop time: no lower b... and no upper b...

State: Filter

EVENT ADMINISTRATION

## Home

Overview of events statistics

ziine

Number of Events: 1 Events in the future: 1 Ongoing events: 3

Status of the jobs: Customer Draft

Number of Events per Customer: No Sports

Revenue per Customer (USD): 0.0 0.2 0.4 0.6 0.8 1.0

Next 5 events

Football Customer Draft

was triggered 6 seconds ago

SPORT EVENT MANAGER

## Event statistics

Displays statistical data and provides insights of all the events.

1 ONGOING EVENTS

Number of event per type

Next upcoming events

- French Open Women's Final: Halep vs Barty
  - Starts: 6/9/2024 5:00:00 PM
  - Ends: 6/9/2024 8:00:00 PM
- French Open Men's Final: Medvedev vs Tsitsipas
  - Starts: 6/9/2024 5:00:00 PM
  - Ends: 6/9/2024 8:00:00 PM
- Euro 2024 Group Stage: Germany vs Spain
- MLB Regular Season: New York Yankees vs Boston
- PGA Championship: Golf Major Tournament

## Locations

SPORT EVENT MANAGER

## Sport Event Manager

Active (0) [toggle]

Event Name	EVENT NAME	DESCRIPTION	TYPE	PRIORITY	START TIME
Wimbledon Quarterfinal: Djokovic vs Nadal	Quarterfinal match of the Wimbledon Championships	Tennis	High	7/10/2024 4:00:00 PM	
ICC Men's T20 World Cup India vs Australia	Cricket T20 World Cup match	Cricket	High	6/4/2024 12:00:00 PM	
Euro 2024 Group Stage: Germany vs Spain	Group stage match of the UEFA European Championship	Soccer	High	6/14/2024 10:00:00 PM	
French Open Women's Final: Halep vs Barty	Women's singles final at the French Open tennis tournament	Tennis	High	6/9/2024 5:00:00 PM	
NBA Playoffs: Los Angeles Lakers vs Golden State Warriors	Western Conference semifinal game	Basketball	High	6/1/2024 9:00:00 PM	
MLB Regular Season: New York Yankees vs Boston Red Sox	Baseball rivalry game at Yankee Stadium	Baseball	Medium	6/15/2024 8:00:00 PM	
Tour de France Stage 1: Brent to Lorient	Cycling stage in the prestigious Tour de France	Cycling	Medium	7/5/2024 1:00:00 PM	
Wimbledon Women's Semifinals: Williams vs Osaka	Semifinal match in the Wimbledon women's singles	Tennis	High	7/11/2024 3:00:00 PM	
Formula 1 British Grand Prix	High-speed racing at Silverstone Circuit	Formula 1	High	7/14/2024 4:10:00 PM	
UEFA Champions League Final: Real Madrid vs Bayern Munich	The pinnacle of European club football	Soccer	High	5/29/2024 10:00:00 PM	
MLB Stanley Cup Final: Toronto Maple Leafs vs Vegas Golden Knights	Ice hockey championship series	Hockey	High	6/2/2024 9:00:00 PM	
French Open Men's Final: Medvedev vs Tsitsipas	Men's singles final at the French Open tennis tournament	Tennis	High	6/9/2024 5:00:00 PM	
PGA Championship: Golf Major Tournament	Top professional golfers compete for the title	Golf	Medium	6/20/2024 10:00:00 PM	
Wimbledon Men's Final: Federer vs Djokovic	Men's singles championship match at Wimbledon	Tennis	High	7/14/2024 4:00:00 PM	

Priority: no lower bo... and no upper bo... (Low, Medium, High)

Start Time: no lower bo... and no upper bo...

End Time: no lower bo... and no upper bo...

State: Filter

Save Delete

Event Name: Stanley Cup Finals: Edmonton Oilers vs Florida Panthers - Game 1

Description: Game 1 of the Stanley Cup Finals. Oilers at Panthers. Standings: 0-0

Priority: High

Type: Hockey

Start Time: 10 Jun 2024 at 02 : 00

End Time: 10 Jun 2024 at 04 : 00

Longitude: 80.325958

Latitude: 26.158476

Tags: Stanley Cup,Florida,Edmonton,Oilers, Panthers

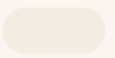
Timeline

Jun 5 - Jun 2

Last 24 hours Last 30 days Next 24 hours Next week Next month Next 6 months Next year

Jul 10 2024 18:00 Jul 11 0:00 6:00 12:00 18:00 Jul 12 0:00

Wimbledon Quarterfinals ... Wimbledon Women's ...



# Agenda

1. Small recap
2. Use case
3. Basic event table
4. Putting events on a timeline
  - How does a timeline work?
  - Filter timeline events
5. Getting metrics out of the events

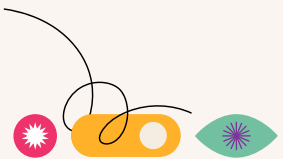


# Goals

We made our own  
event manager

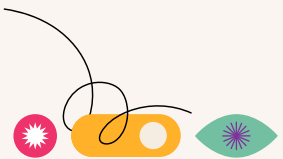
We understand  
how we can use a  
timeline

We are inspired to  
be creative



# Small recap

Because we never remember everything

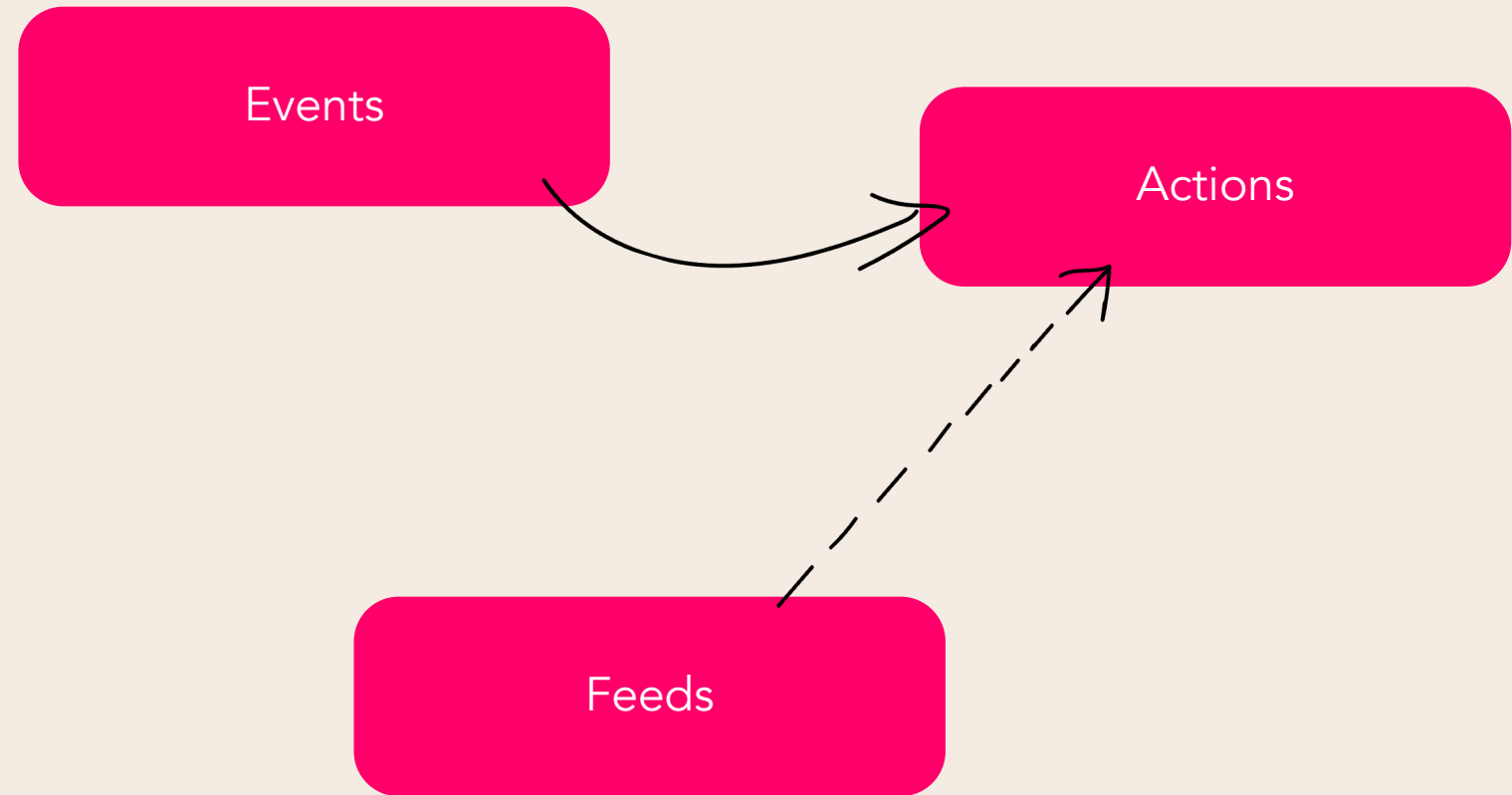




# Small recap

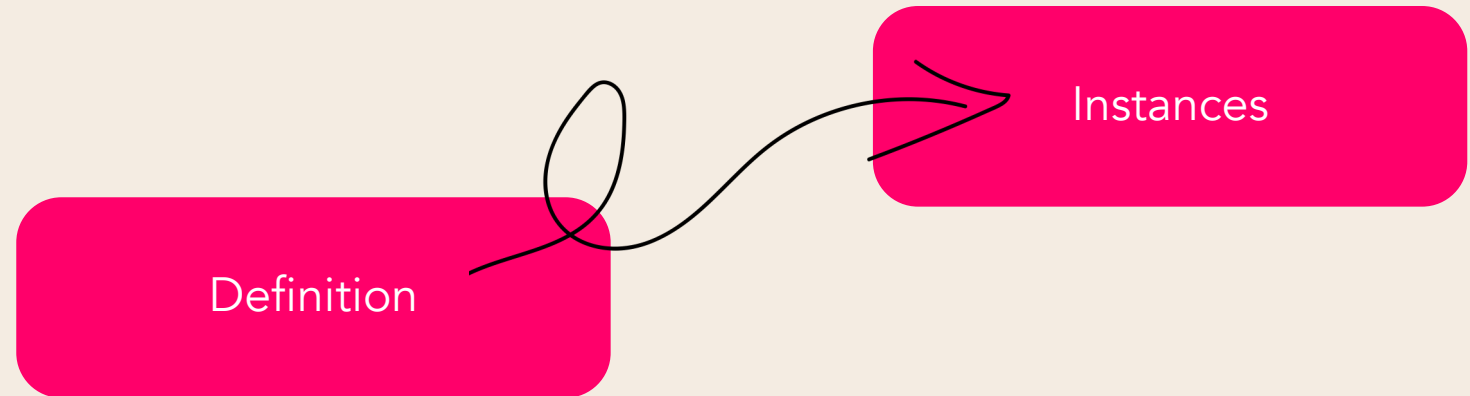
## Three main parts of Low Code Apps

- Events
- Actions
- Feeds



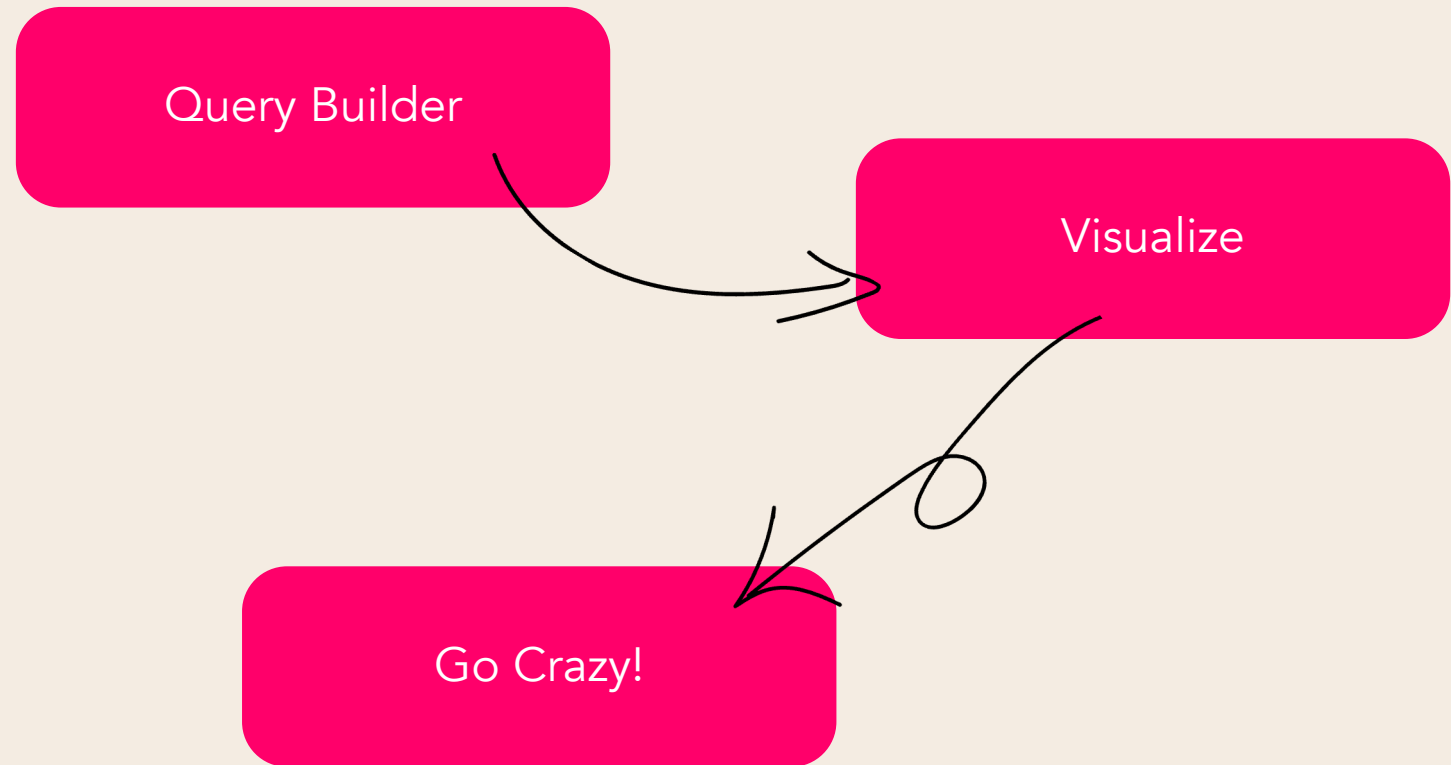
# Small recap

## DataMiner Object Modelling (DOM)



# Small recap

## Generic Query Interface (GQI)



# Use case – first increment

## Let's practice what we've learned

Get ready for another thrilling project, team! We have an incredible opportunity to create a sophisticated tool that will revolutionize **event management** for our exceptional manager, Andi Tamer. Andi will be thrilled by the insightful information we'll provide about our events, including upcoming events, past events, and events in progress. Our **goal** is to empower Andi to manage these events with ease and efficiency.

### Goals:

- Basic event page
  - Filtering for event state
  - Easy to navigate and beautiful on the eye
- Add, edit and delete events

**Sport Event Manager**

Active (0)

Filter

Type

Priority

Start time

End time

State

NAME	DESCRIPTION	TYPE	PRIORITY	START TIME	END TIME	STATE	TAGS
UEFA Champions League Final: Real Madrid vs Bayern...	The pinnacle of Europea...	Soccer	High	5/29/2024 10:00:00 PM	5/30/2024 12:30:00 AM	Champi	
UEFA Europa League Final: Atalanta vs Bayern 04 Leve...	The Europa League final.	Soccer	High	5/31/2024 8:00:00 AM	6/1/2024 1:00:00 AM	UEFA, B	
NBA Playoffs: Los Angeles Lakers vs Golden State War...	Western Conference sem...	Basketball	High	6/1/2024 9:30:00 PM	6/2/2024 12:00:00 AM	NBA, Pl	
NHL Stanley Cup Finals: Toronto Maple Leafs vs Vegas...	Ice hockey championship...	Hockey	High	6/2/2024 9:00:00 PM	6/2/2024 11:30:00 PM	NHL, Sta	
ICC Men's T20 World Cup: India vs Australia	Cricket T20 World Cup m...	Cricket	High	6/4/2024 12:00:00 PM	6/4/2024 3:00:00 PM	Cricket	
French Open Women's Final: Halep vs Barty	Women's singles final at ...	Tennis	High	6/9/2024 5:00:00 PM	6/9/2024 8:00:00 PM	French O	
French Open Men's Final: Medvedev vs Tsitsipas	Men's singles final at the...	Tennis	High	6/9/2024 5:00:00 PM	6/9/2024 8:00:00 PM	French O	
Euro 2024 Group Stage: Germany vs Spain	Group stage match of th...	Soccer	High	6/14/2024 10:00:00 PM	6/15/2024 12:00:00 AM	Euro 20	
MLB Regular Season: New York Yankees vs Boston Re...	Baseball rivalry game at Y...	Baseball	Medium	6/15/2024 8:45:00 PM	6/15/2024 11:30:00 PM	MLB, Ya	
PGA Championship: Golf Major Tournament	Top professional golfers ...	Golf	Medium	6/20/2024 10:00:00 AM	6/23/2024 8:00:00 PM	PGA Cha	
Tour de France Stage 7: Brest to Lorient	Cycling stage in the prest...	Cycling	Medium	7/5/2024 1:00:00 PM	7/5/2024 5:30:00 PM	Tour de	
Wimbledon Quarterfinals: Djokovic vs Nadal	Quarterfinal match of the...	Tennis	High	7/10/2024 4:00:00 PM	7/10/2024 7:00:00 PM	Novak E	
Wimbledon Women's Semifinals: Williams vs Osaka	Semifinal match in the W...	Tennis	High	7/11/2024 3:00:00 PM	7/11/2024 6:00:00 PM	Wimbles	
Wimbledon Men's Final: Federer vs Zverev	Men's singles champions...	Tennis	High	7/14/2024 4:00:00 PM	7/14/2024 7:00:00 PM	Wimbles	
Formula 1 British Grand Prix	High-speed racing at Silv...	Formula 1	High	7/14/2024 4:10:00 PM	7/14/2024 6:00:00 PM	Formula	

Event Name: Stanley Cup Finals: Edmonton Oilers vs Florida Panthers - Game 1

Description: Game 1 of the Stanley Cup Finals: Oilers at Panthers. Standings: 0-0

Priority: High

Type: Hockey

Start Time: 10 Jun 2024 at 02 : 00

End Time: 10 Jun 2024 at 04 : 00

Longitude: -80.32958

Latitude: 26.158476

Tags: Stanley Cup,Florida,Edmonton,Oilers, Panthers



# Hands-on time!

1. Go to '**Catalog.dataminer.services**'
2. Search for 'Event Manager DOM LCA tutorial'
3. Deploy the application package

## DataMiner Catalog

The DataMiner Catalog offers an extensive collection of downloadables created by DataMiner content experts, such as packages, connectors, Automation scripts, Visio files, and more.

 [Browse catalog](#)

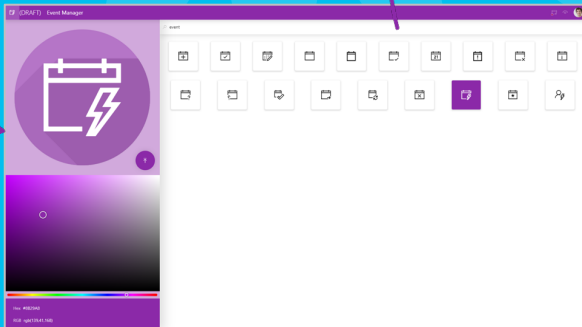
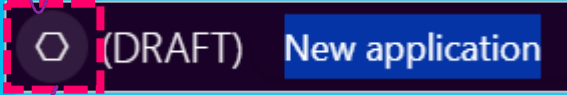
The screenshot shows the DataMiner Catalog interface. At the top left is the 'dataminer Catalog' logo. A search bar at the top right contains the text 'Event Manager DOM LCA tutorial'. Below the search bar, there are two rows of filter buttons: the first row has 'Grid' (selected) and 'List', and the second row has 'All', 'Public' (selected), and 'Private'. The main content area displays a single search result: a cube icon followed by the title 'Event Manager DOM LCA tutorial' and the subtitle 'Application package'.

Start a new app from scratch.

Other apps +

# Let's get our hands dirty!

Choose your icon, color and name.



Let's make Andi Tamer happy with our first increment!

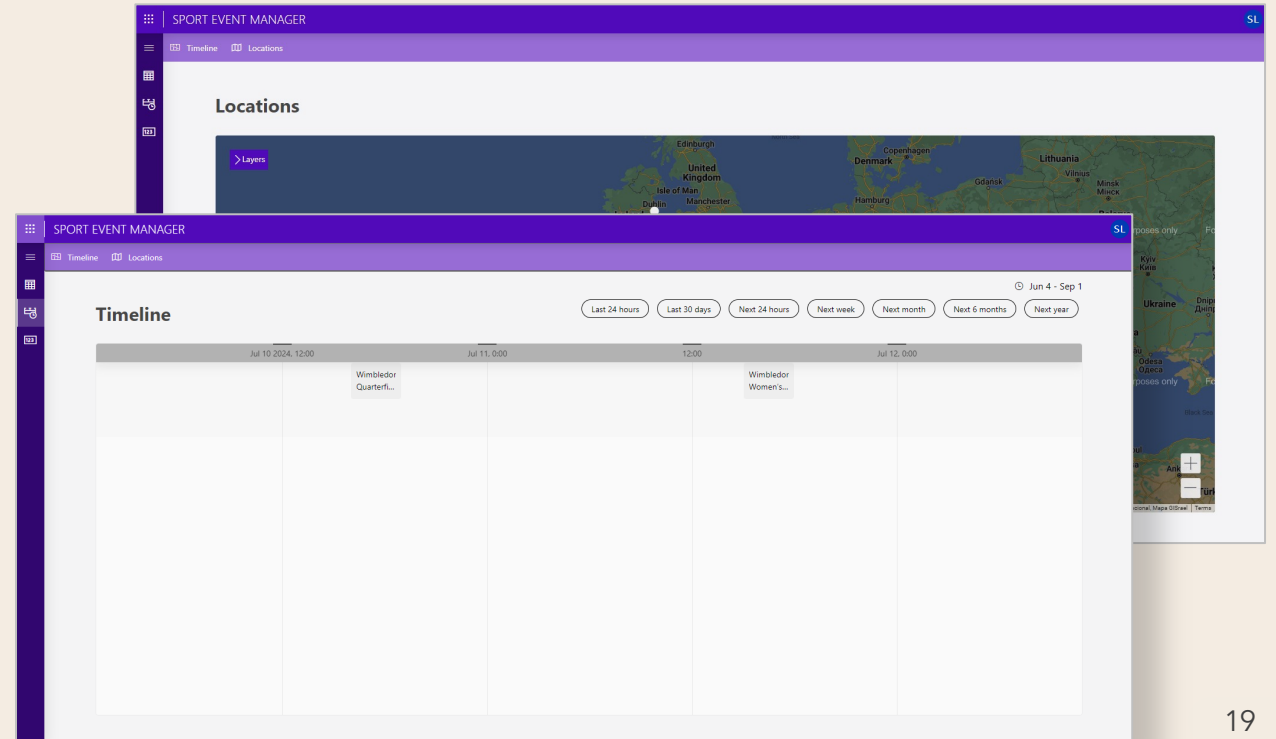
# Use case – second increment

## Andi's Chronological Extravaganza!

But that's just the start! Andi wants an advanced **timeline** visualization that displays all events in chronological order. This timeline should be interactive, allowing Andi to zoom in on specific periods or **apply a time range**. Additionally, integrating **maps** will provide a geographical context for each event. This visual representation will make it easier for Andi to understand the sequence, timing, and location of each event..

### Goals:

- Interactive event timeline page
  - Allow for selecting a specific time range
  - Add filters to allow Andi for quick filtering of time ranges
- Optional: Interactive maps
  - Allow to see where the events take place



GET INSPIRED



Let's have

 a look



GET INSPIRED



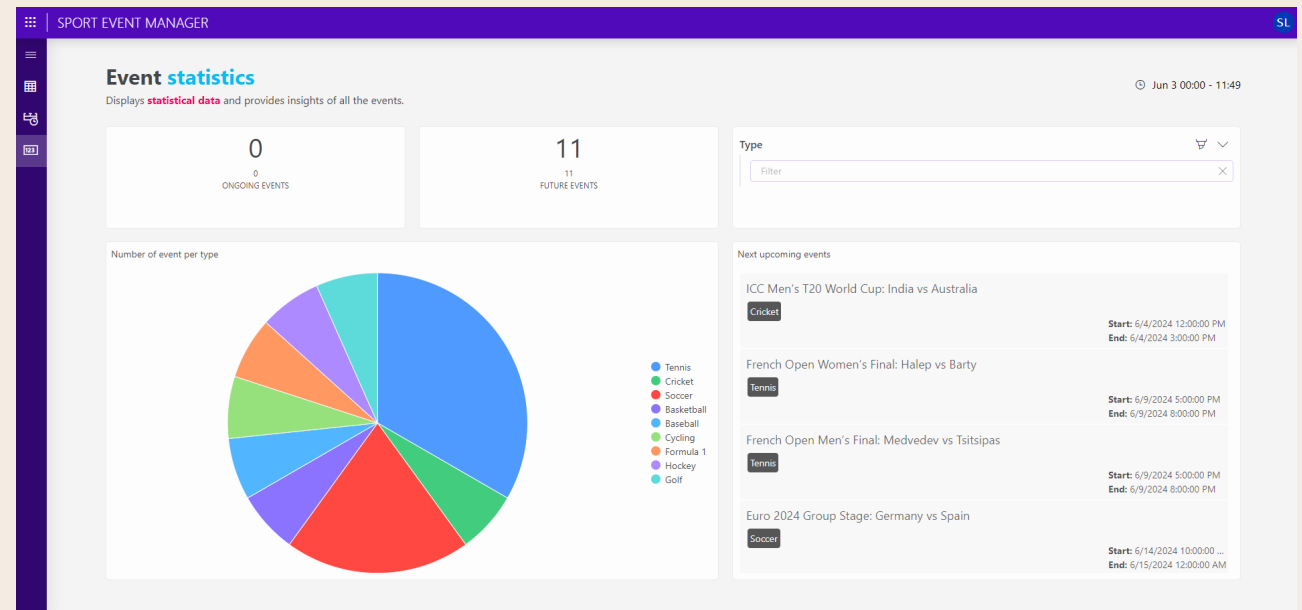
# Use case – final increment

## Crystal Clear Reports for Event Brilliance!

Our ultimate **objective** is to provide analytics to give insights on event performance, attendance, and feedback. Andi wants **data-driven** reports that can help make informed decisions and improve future events.

### Goals:

- Event statistics page
  - See counters for ongoing and future events
  - See upcoming events



GET INSPIRED



Let's have

 a look



GET INSPIRED

# Make the story yours

150

## Lead the Charge to Success!

- First increment done
- Take the lead on the next iterations!
- Deadline: June 21<sup>st</sup>
- Send your result to Andi: [andi.tamer@skyline.be](mailto:andi.tamer@skyline.be)

The screenshot displays the 'SPORT EVENT MANAGER' application interface. It features several key components:

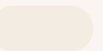
- Event statistics:** A dashboard showing '1 ONGOING EVENTS' and a pie chart titled 'Number of event per type'. The chart is divided into segments for various sports: Tennis, Cricket, Soccer, Basketball, Baseball, Cycling, Formula 1, Hockey, and Golf.
- Locations:** A world map showing event locations across various continents.
- Next upcoming events:** A list of events with details such as 'French Open Women's Final: Halep vs Barty', 'French Open Men's Final: Medvedev vs Tsitsipas', 'Euro 2024 Group Stage: Germany vs Spain', 'MLB Regular Season: New York Yankees vs Boston', and 'PGA Championship: Golf Major Tournament'.
- Sport Event Manager Table:** A table listing events with columns for Event Name, Description, Type, Priority, and Start Time. The table includes various sports events like Wimbledon, ICC Men's T20 World Cup, Euro 2024, French Open, NBA Playoffs, MLB Regular Season, Tour de France, Wimbledon Women's Semifinals, Formula 1, UEFA Champions League Final, NFL, Stanley Cup, French Open Men's Final, PGA Championship, and Wimbledon Men's Final.
- Timeline:** A horizontal timeline view showing event occurrences over time, with filters for 'Last 24 hours', 'Last 30 days', 'Next 24 hours', 'Next week', 'Next month', 'Next 6 months', and 'Next year'.
- Event Detail Form:** A form for editing an event, including fields for Event Name, Description, Priority, Start Time, End Time, and Location.



# We Value Your Feedback!

Help us shape the future of Empower

- Thank you for participating in Empower '24!
- Please take a moment to fill out our feedback form
  - <https://forms.office.com/e/1vDWZZMY59>
  - Scan the QR code



ASK AWAY

**Questions?**



GET INSPIRED

Inspiring  integrations



DataMiner

DevOps

GET INSPIRED

# Panel session



THOMAS GUNKEL  
Market Director Broadcast  
Skyline Communications

MODERATOR



**David Mitchinson**  
Techex



**Ralf Korschner**  
Arista Networks



**Ruslan Khudaberdin**  
Bridge Technologies

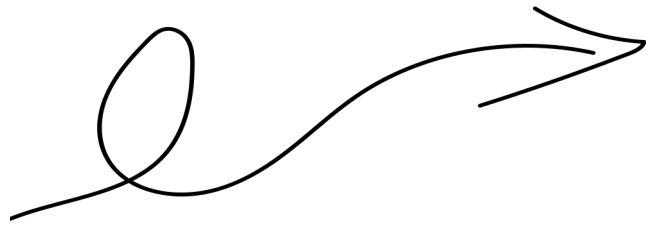


**Sam Lerouge**  
Haivision



# Technology Partnerships

**EXPERTISE IS KEY**



DataMiner

Products & Technology

Workflows

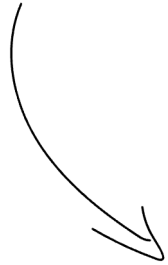




# Technology Partnerships

**BETTER – FASTER – CHEAPER**

Better



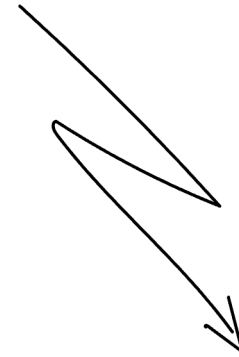
Connectors

Faster



Out-Of-The-Box  
APPS

Cheaper



Free-Of-Charge  
APPS



# Skyline Lab

**TEST – DEMONSTRATE – EVOLVE – INTEGRATE INTO DATAMINER SOLUTIONS**

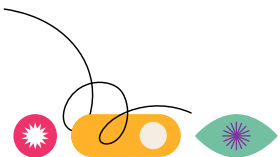
multi-vendor & multi-domain

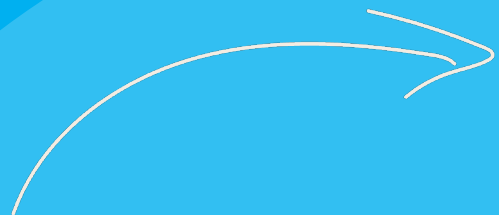
NMOS IS-04 & IS-05

flow monitoring

PTP monitoring

tech partner APPs





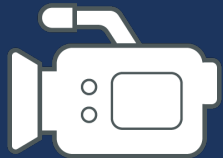
# Sam Lerouge

Sales Engineer, **HaiVision**



slerouge@haivision.com

## Video Networking



### Broadcast / Media

Video Contribution,  
Remote Production,  
Global Video Networking, Live  
Streaming

SIMPLIFYING THE BROADCASTER'S THIRST  
FOR CONTENT

### Government

Situational Awareness  
Surveillance  
& Reconnaissance  
Critical Visual

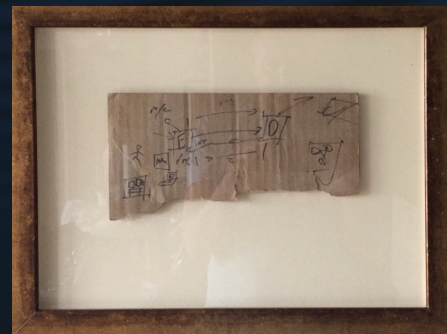
SUPPORTING MISSION-

# CELEBRATING 20 YEARS OF INNOVATION IN LIVE VIDEO

# HAIVISION







The original "back of the napkin" SRT idea



Haivision releases Makito X encoder with SRT



Haivision Releases SRT Open Source and Begins the SRT Alliance



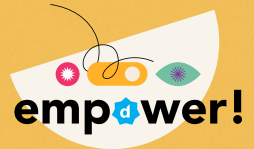
Haivision Received Emmy for SRT

650+ Members

SRT Alliance Members

2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

DEMO





# Ruslan Khudaberdin

System Engineer, **Bridge Technologies**

✉ [ruslan.khudaberdin@bridgetech.tv](mailto:ruslan.khudaberdin@bridgetech.tv)



# Bridge Technologies

## About Us



- Founded in 2004
- Privately owned
- Offices in Oslo
- 35 Employees
- Engineering centric





SAFEGUARDING OVER  
**900 MILLION** SUBSCRIBERS



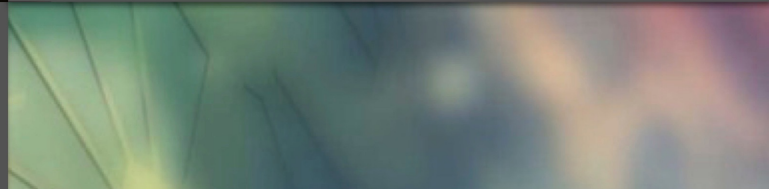
POWERFUL  
**MONITORING & ANALYSIS**  
SOLUTIONS



DEPLOYED IN OVER  
**94 COUNTRIES**



MORE THAN  
**20 000 CHANNELS**  
PROTECTED



**800+**  
**INSTALLATIONS**  
WORLDWIDE

Over The Wall

EUROPEAN OUTDOOR FILM TOUR STARTS  
Kurzfilme über Extremsport

Thursday 9 October 2014  
9:40:08 a.m.

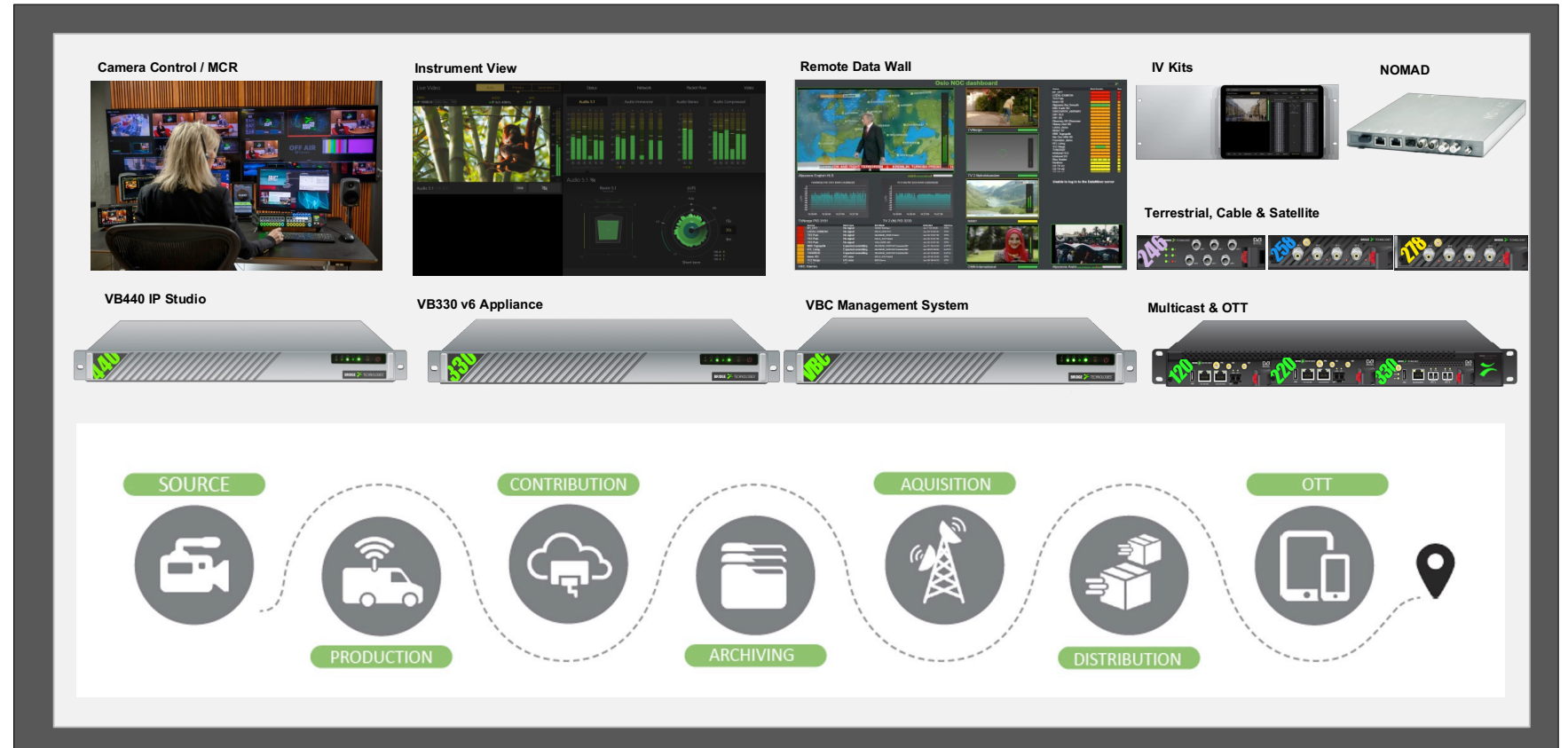
Complexity? It's simple

# Integrated Services Monitoring



## End-to-End analytics

- Integrated Services Monitoring is an approach to quality that addresses the multiple layers of the broadcast and media cycle
- From production through signal acquisition, contribution streams, OTT/streaming media, traditional broadcast distribution with DTT Cable or Satellite to picture archiving

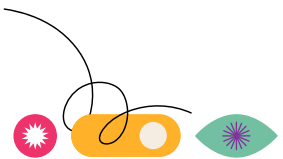




# Integrated Services Monitoring

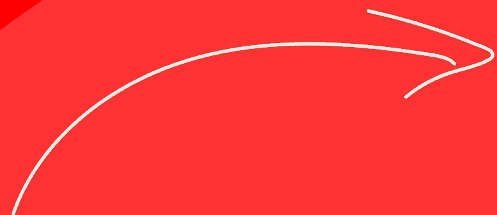
## Monitoring & Analysis

- Leading Monitoring & Analysis provider for 20 years
- Showcasing immersive audio & HDR picture analysis
- Global sporting events; Japan, China, Qatar, Australia & Paris
- Atmos & HDR streaming video service providers
- With Dataminer for large Japanese broadcaster; orchestration of ST2110 streams



DEMO





# Ralf Korschner

System Engineer EMEA, **ARISTA**



ralf@arista.com

# Introducing Arista Networks

- Financials 2022
  - \$4.29B Revenue
- Over 9000 customers
  - ~25% Fortune 500
- 20%+ Market Share <sup>1</sup>
  - #1 vendor in 100/200/400G
    - 41.5% Market Share
- Net Promoter Score +80 <sup>2</sup>
  - Average rating 9.3/10

## Industry Recognition

Leader with top score in strategy in The Forrester Wave™: Open Programmable Switches for Business wide SDN, Q3 2020

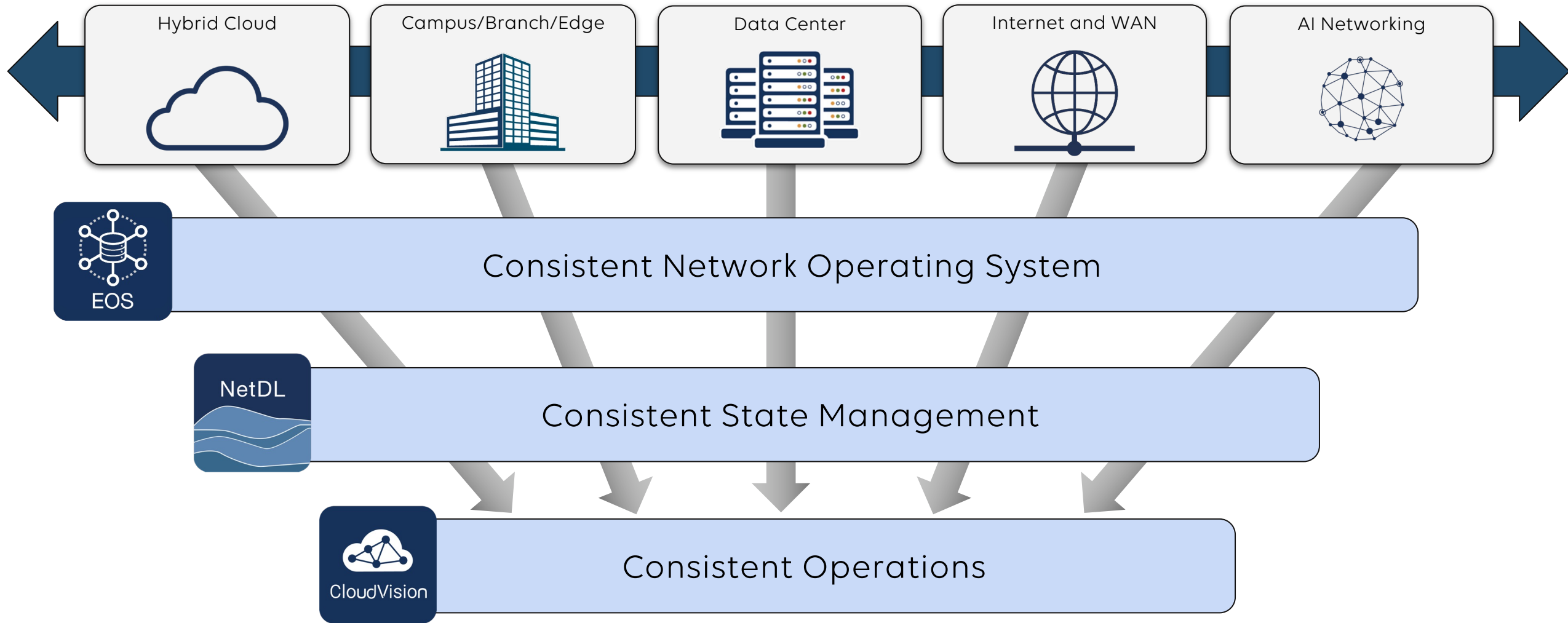
Leader with top score in current offering The Forrester Wave™: Network Analysis And Visibility, Q2 2023



<sup>1</sup>Crehan Research Q2'2022 <sup>2</sup>TechValidate Survey 2022







Improving efficiency through consistency across *all* domains and layers



## ABOUT

Treat network configurations  
and network models as  
software.

Source/Version Control.

Peer Review, Signed Commits,  
Pre-Deployment and Post-  
Deployment Automated Unit  
and System Tests. Static and  
Dynamic Analysis.

Change and mature the target  
operating model for modern  
infrastructure.



# VISION

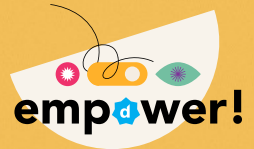
---

Modernized Operating Model  
for Networked Systems





DEMO





# David Mitchinson

Solutions Director, **Techex**



[dave.mitchinson@techex.co.uk](mailto:dave.mitchinson@techex.co.uk)

# Techex headlines

Leading broadcast design architect for cloud and IP live broadcast solutions

## WE ARE TEAM TECHEX

- We develop, design, commission and support live video transport, processing, redundancy and monitoring solutions for tier-1 broadcasters and media companies
- Centre of excellence for transformation: crafting our own technology and partnering with world-class companies
- Hunting out disruptive technology since 1971, working on the most progressive and critical projects
- Value underpinned by trusted partner status and long-term continuous development engagements
- 50+ employees across UK and USA

## WE PARTNER



## WE CREATE

**txedge.**

Premium protocol gateway,  
protection & monitoring for  
your most valuable live  
content

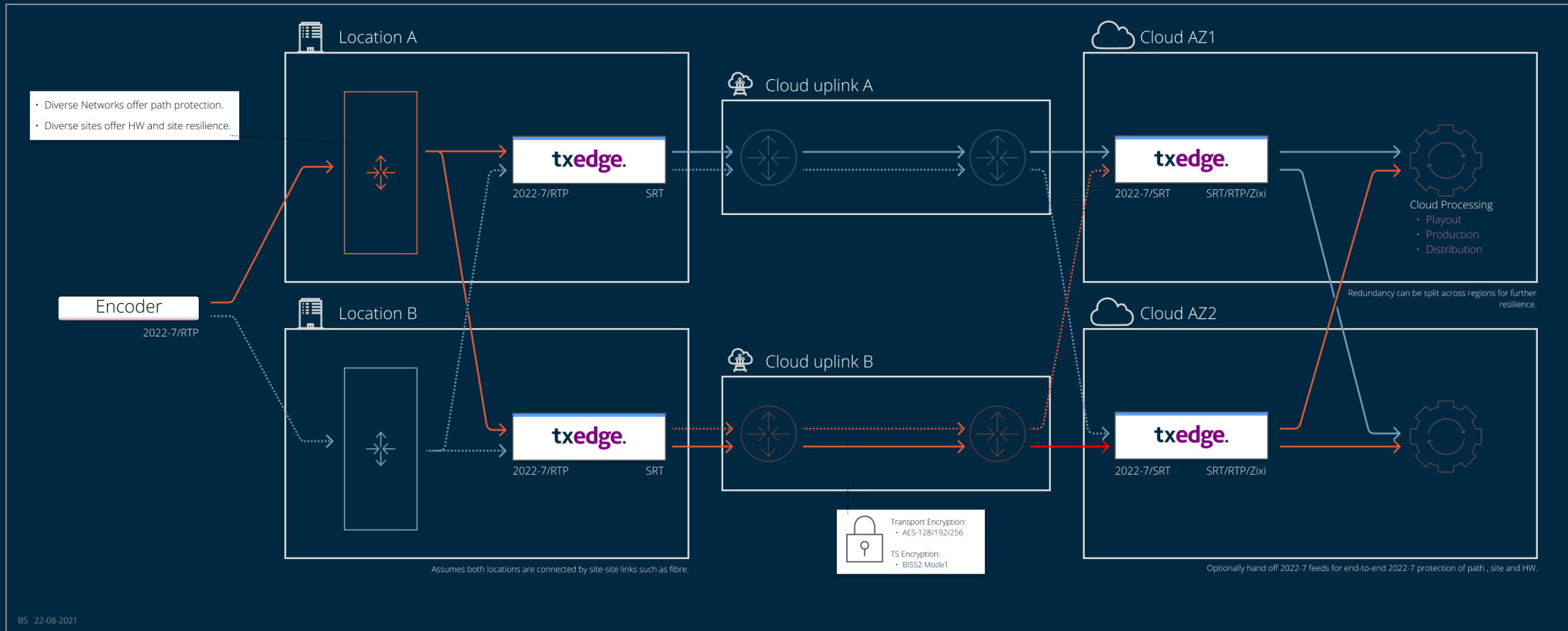
**txdarwin.**

Live media processing,  
transport & monitoring for  
the most challenging cloud  
and hybrid workflows

**techex.**

# tx edge overview

Enabling end-to-end redundancy and detailed per-hop monitoring



# tx edge key features

- Provides a properly engineered framework enabling ARQ benefits to be used reliably within Tier 1 broadcast.
- It's about what we build around and on top of the ARQ layer;
  - Trust Boundary protection
  - Content redundancy protection: Maximizing the potential to use ST2022-7 and combine with a variety of other schemes
  - Traffic policing
  - Thorough and consistent monitoring: WHAT is monitored and FREQUENCY of monitoring
  - Proper orchestration
  - Ability to deploy on any compute platform so orchestration is unbroken and can be maintained end to end
  - License orchestration and licensing flexibility
  - MPEG\_TS or NDI encapsulated payload
  - Advanced diagnostic tools (including triggered PCAP)
  - Easy integration with external systems (e.g. Dataminer), aided by Techex's orchestration layer to make this a single integration
  - An In-house developed solution that takes no short cuts: Designed to ideally match the requirements of the most demanding Broadcasters / Telcos carrying the highest value content

DEMO





# tx darwin

Unique solutions to transform your content

txdarwin. Overview Modules Logic Blocks Integrations System NAB 2024 - tx darwin-1\_SEAMSWITCH-A

tx darwin Seamless Switch A

Search... Filter by tags

- Input
  - AMPP Input (1.1.1, Alpha)
  - File Playback (1.2.1, Beta)
  - RTP Input (high performance) (1.1.1, Beta)
  - RTP Input (1.1.1, GA)
  - SCTE-35 Generator (1.1.1, Alpha)
  - SRT Input Listen (high performance) (1.1.1, Beta)
  - SRT Input Listen (1.1.1, GA)
  - SRT Input caller (high performance) (1.1.1, Beta)
  - SRT Input Caller (1.1.1, GA)
- Monitor
- Transform
- Output
- Integration
- Other

### Seamless Switching

The Techex tx darwin Seamless Switch workflow includes our revolutionary PES switch and software Multiplexer. This application is primarily designed for Mezzanine stream switching such as those coming from Playback.

Dynamic User Interface

The tx darwin platform is designed to be deployed and configured at scale using APIs and IaC but a good User Interface is always key.

Our UI can import and embed objects such as images, webpages and even live Grafana frames. We also offer buttons to allow operational control of complex functions, such as our switch.

Hint: You can embed views from your external probes and devices, such as a BridgeTech Probe MediaWindow.

Legend: ● MPEG-TS, ● Elementary Stream, ● Table

txdarwin by techex

# Panel session



THOMAS GUNKEL  
Market Director Broadcast  
Skyline Communications

MODERATOR



**David  
Mitchinson**  
Techex



**Ralf  
Korschner**  
Arista Networks



**Ruslan  
Khudaberdin**  
Bridge Technologies



**Sam Lerouge**  
Haivision





ASK AWAY

Questions?

