

MCMA

Media Cloud and Microservice Architecture

Jump start your media infrastructure in the cloud

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<https://tech.ebu.ch/groups/mcma>

Our active contributors

**Bloomberg
Media**

EBU

OPERATING EUROVISION AND EURORADIO



GLOOKAST
solving the workflow puzzle



FileCatalyst[®]
reinventing file transfer



What is MCMA?

- Best practices to implement media workflows in the cloud
 - Workflow modeling and long running processes
 - Service integration
 - Infrastructure management and service selection based on cost and performance
- Methodology to support services from most common cloud providers
 - AWS, Azure, GCP,....
- Libraries to facilitate implementation of cloud services
 - Service sequencing
 - Job management, tracking and monitoring
 - Data store and repository
 - Interaction with native cloud services, open source and commercial components
 - Expose a common pattern for serverless, docker based or instance based processing

What is MCMA?

- Optimized continuous integration and deployment pipeline
 - Gradle
 - Terraform
- Bridge between cloud and on-premises infrastructure
 - Docker deployment
 - Terraform
- A methodology to not make the same mistake we made!!
 - Cost management
 - Infrastructure management
 - Support

Design considerations

- Limit learning curve
- Expose resources as reusable code
- Repeatable patterns
- Easily configure and deploy
- Developer friendly
- Follow opensource mentality

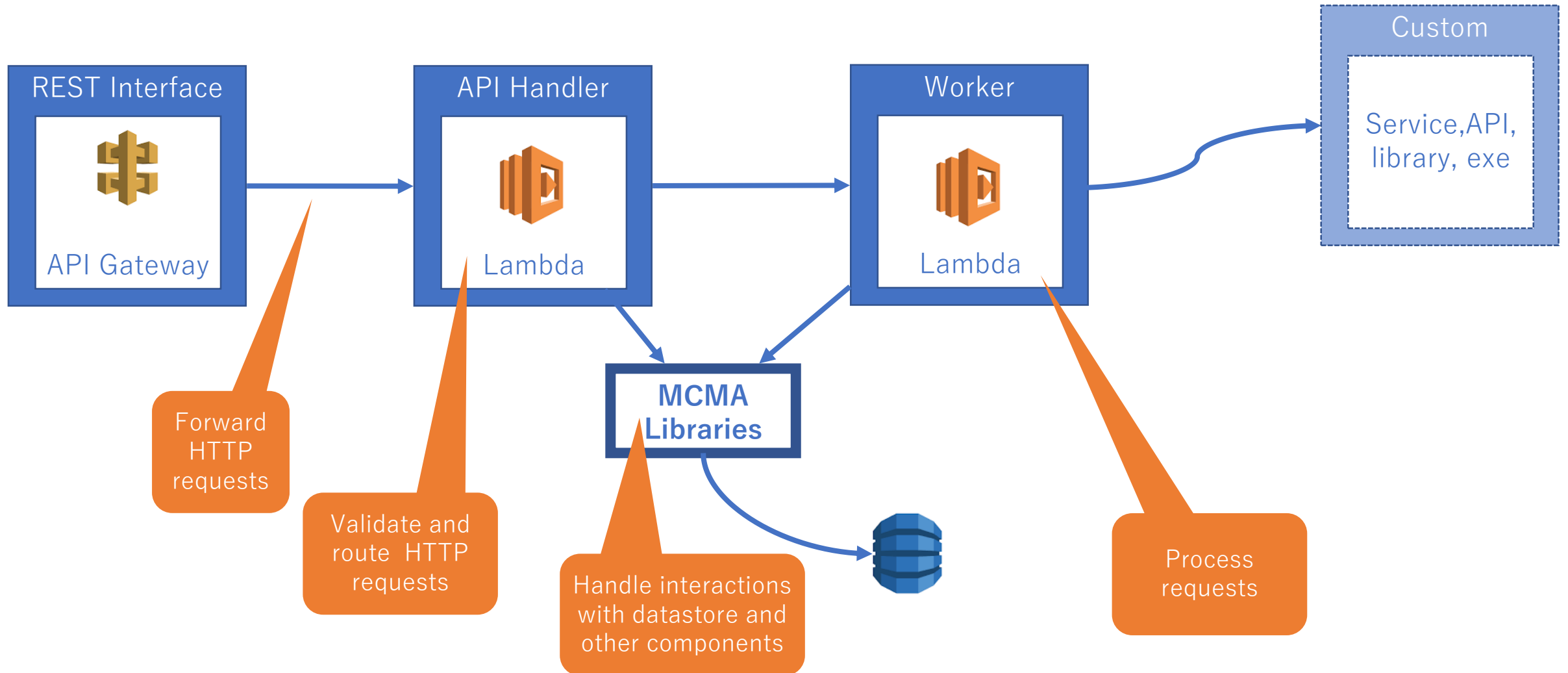
Model and implementation design

- Job management and monitoring
- Compute processing exposed thru serverless, docker or custom instances
- Service sequencing
- Long running transactions support
- Event based communication pattern
- Service registration and discovery
- Standardized REST based data repository

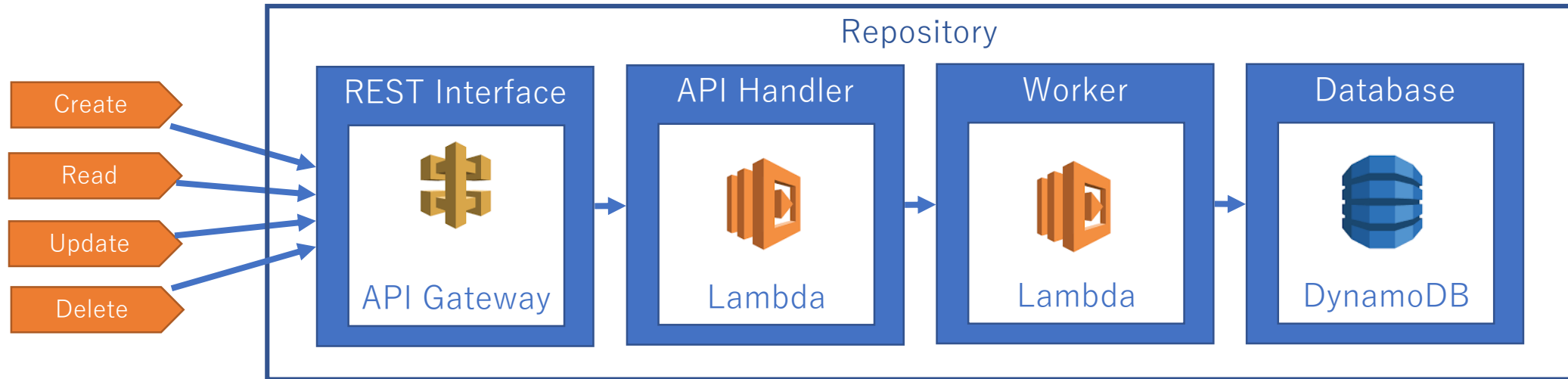
Technology stack details

- Code
 - Node.js and NPM for MCMA libraries
 - DotNet core
 -
- Code orchestrator
 - Gradle
- Deployment and configuration
 - Terraform

MCMA Common Service Pattern



Repository Service Design



- Restful CRUD interface
- Minimum customization to store your data
- Dynamic schema support

Repository Service

- Minimum representation for an object

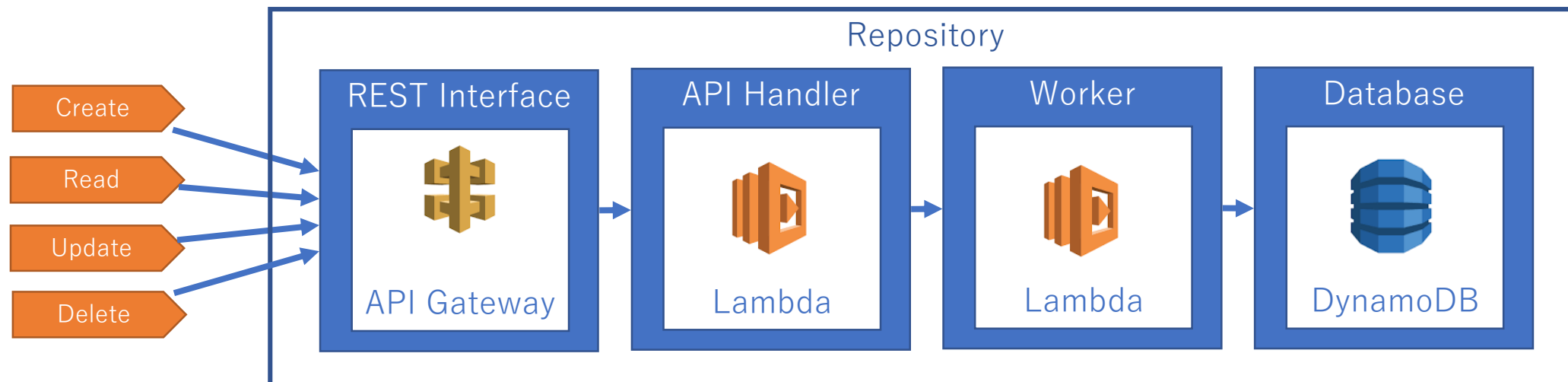
```
{  
  "id": "https://service_address/ResourceType/bc49b54b-2eab-4323-a0ce-fcdfb73ee9dc",  
  "@type": "ResourceType"  
}
```

- Dynamic schema : store what you want!

```
{  
  "id": "https://service_address/MyOtherResourceType/bc49b54b-2eab-4323-a0ce-fcdfb73ee9dc",  
  "@type": "MyOtherResourceType",  
  "event": "PTS 2019",  
  "session": "MCMA ROCKS"  
}
```

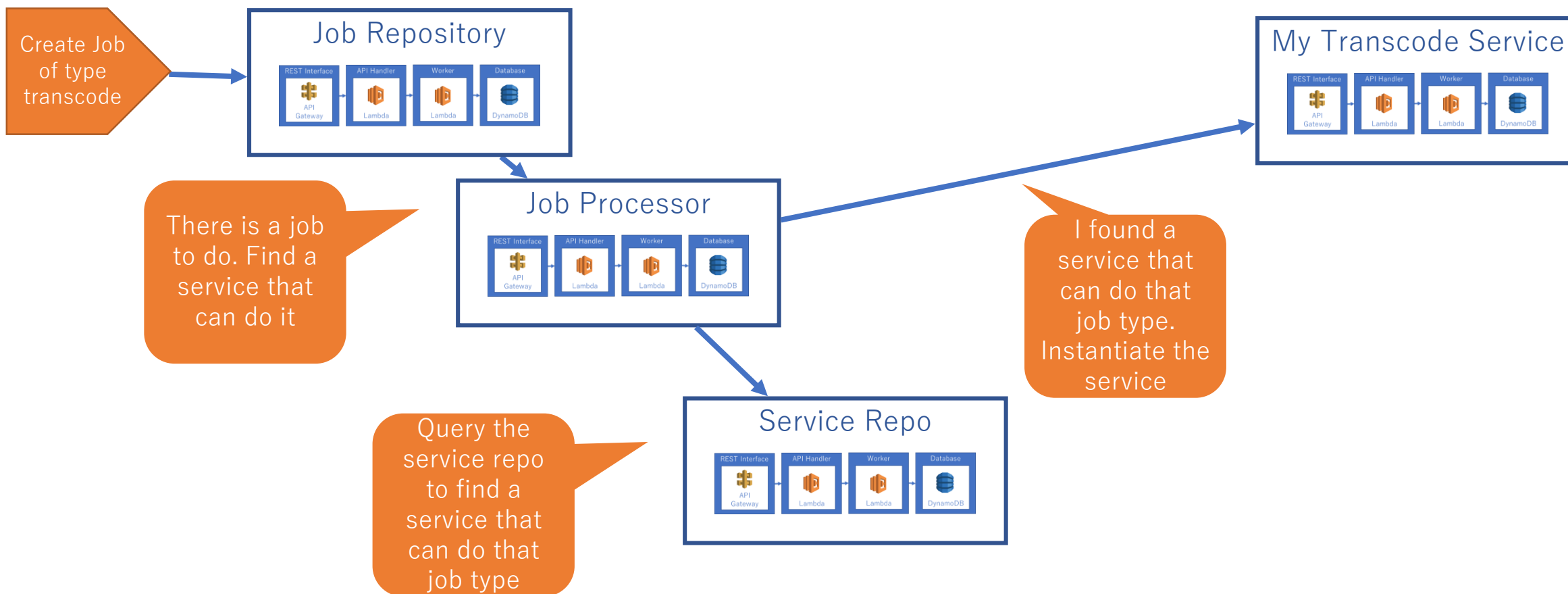
The service repository service

*Wait,
What?*

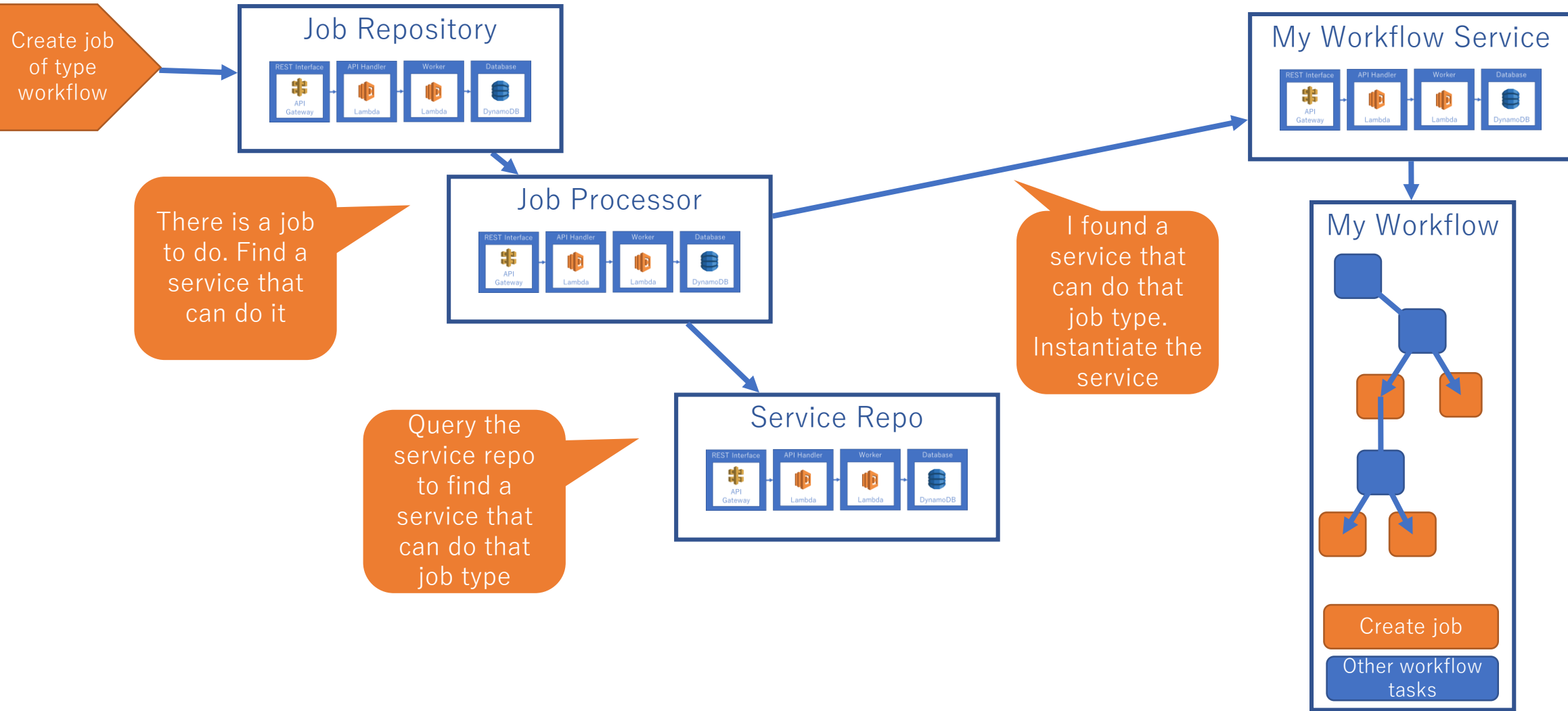


- Yellow pages of configured services
- Contains information about each service capabilities

Service Instantiation Flow (example 1: Transcode)



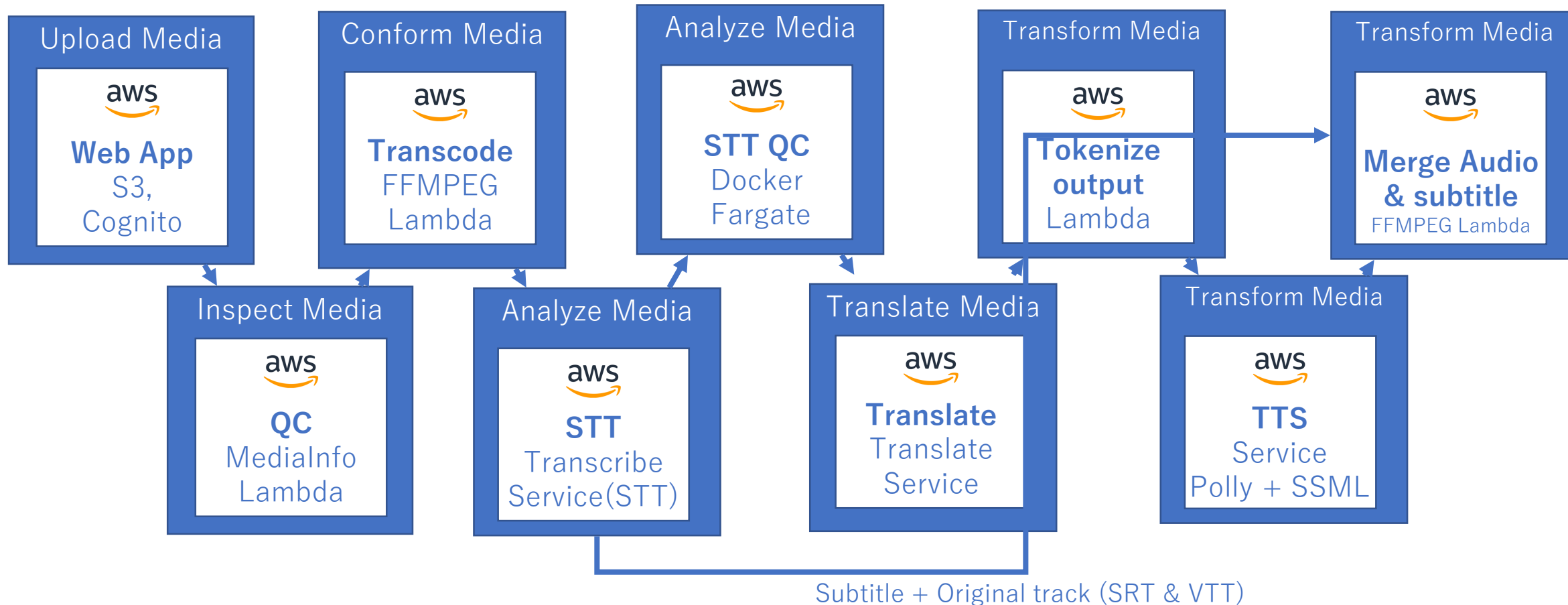
Service Instantiation Flow (example 2: Workflow)



Demo 1: STT + Translation + TTS



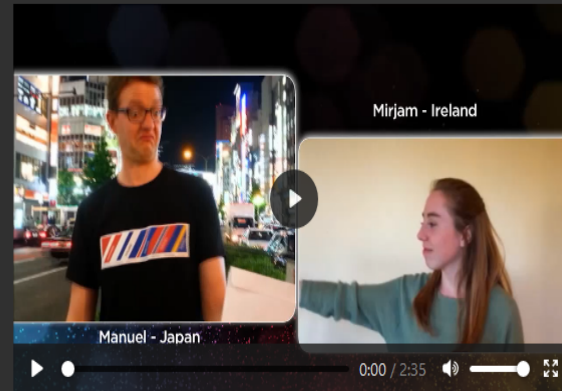
STT benchmarking



Demo 1 – screenshot (STT on screen)

REFRESH


Title File Name	Status
GF12015_GF_ORF_00_18_09_conv.mp4	✓
JF1 Jimmy_Fallon_Funniest_Moments_compilation_hd.mp4	✓



Title: GF1

Description: GF1

File Name: 2015_GF_ORF_00_18_09_conv.mp4

Speech to Speech: 

AI Workflow Status: ✓ COMPLETED

AWS

Azure

Transcript

STT Benchmarking

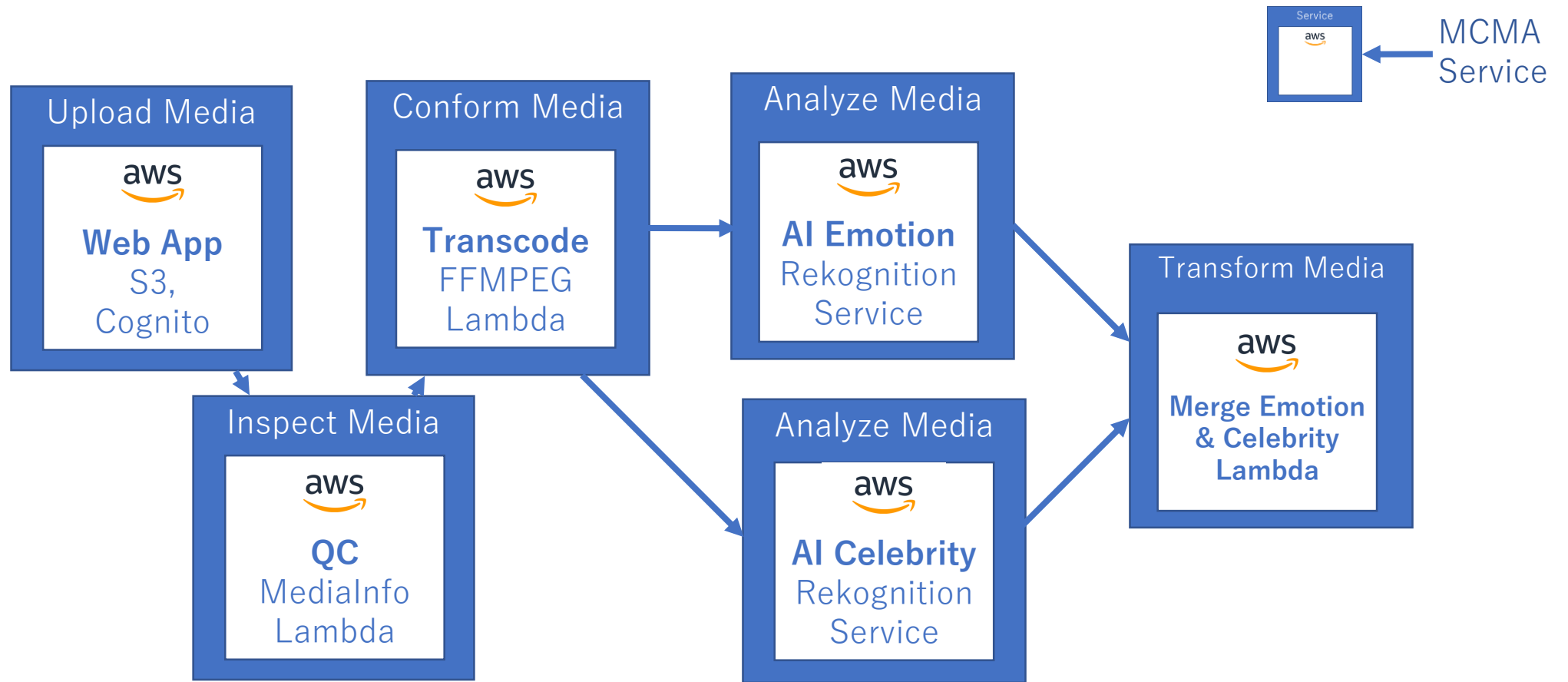
Translation

Speech to Speech

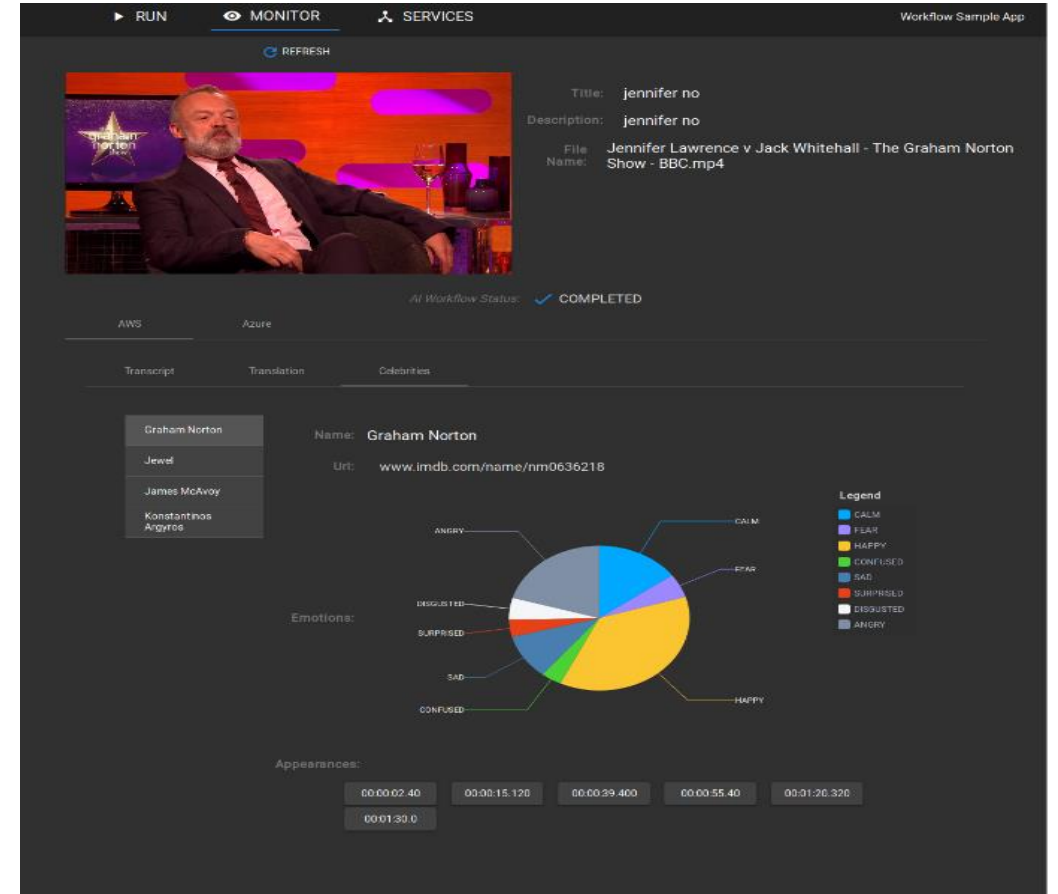
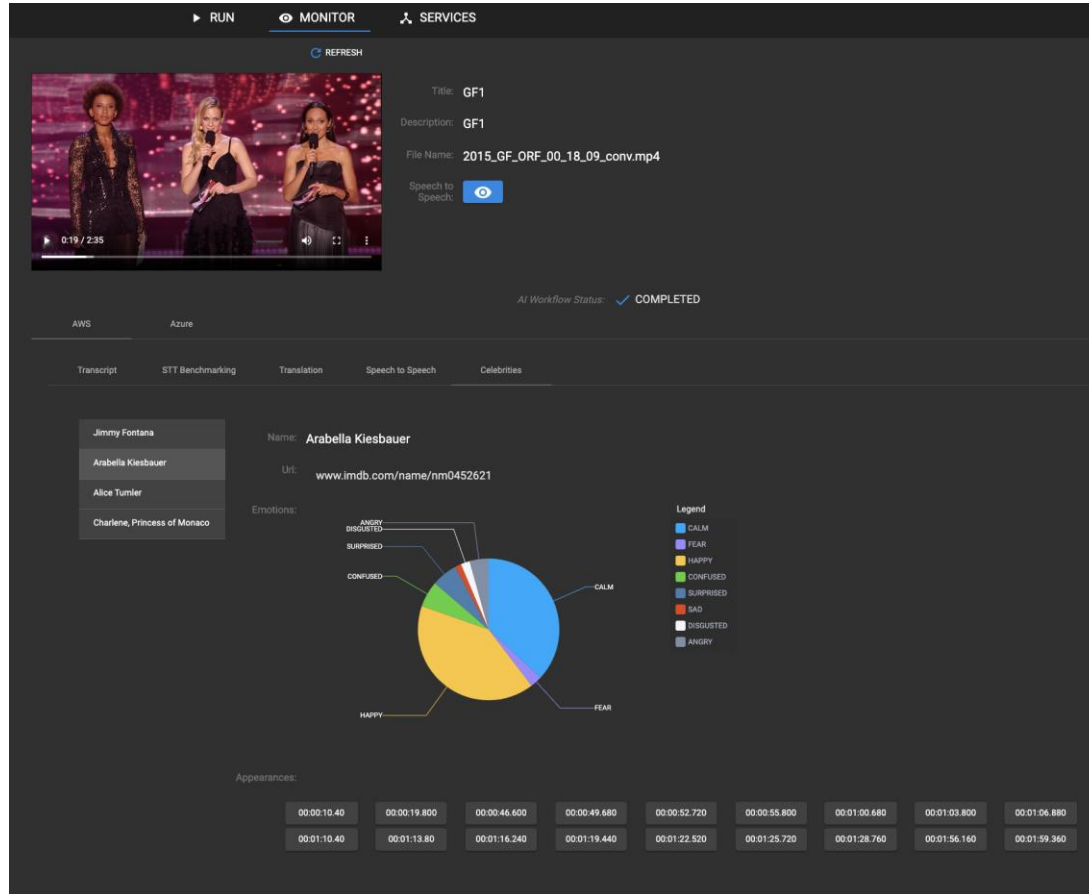
Celebrities

"That is what we love "way. Love about Eurovision. The whole world's participating and on to make sure the world remains the a great place that it is, we're is. We're hosting this song contest as a green events. Millions of events, millions, our families and friends in 45 countries watching together for one big party like this very big family of 10,000 party people here in Vienna. Vienna on. And I've got some news for you. For you for the first time ever, and I'm not kidding, we're kidding. We're even live life in China. I feel so excited think so. Excited about that news. news I've been seen learning Chinese all night long. To you. Thio. Welcome our new audience. Please don't. We're having so much fun right now. But now, but being part of eurovision your vision is not only fun. son. Actually, it's hard work because you have to decide who's going to be the big winner tonight. So make a choice. Have an Haven't opinion and shout it shouted out loud. You should. Act loud, should act like a woman and vote. Voting on a boat. Waiting is quite easy. You can vote by calling the phone number shown on your screen. If you wish to vote for song number five, dial the telephone number Emma shown on your screen and dial values Omelet, sweetie, booty palatial. Sony made such a Brazilian. Remember the telephone. Ask Chris about concrete that zero live. such. You can also send a text message or use for the easiest and easy is the most fun way to vote. Download our official Eurovision app up via the APP store right now. You store. Right now, you can vote up to 20 times for any of these countries except your own, unfortunately, and sorry. And just like in a balanced, loving relationship, the work is done fifty-fifty. Fifty done. 50 50 50 percent of the votes come from you and fifty percent 50% from your national games insurance. The lines will open after the last song has been performed. But But your phone phone's back down. We'll down will tell you. I promise. Enough No enough talking. Let's start with the singing was saying I'm ready. Let's go. No, no, no, not us. Them. Three. Two. One. Let the Eurovision Song Contest begin. Them 3 to 1 lead."

Demo 2: Celebrity and Emotion Detection

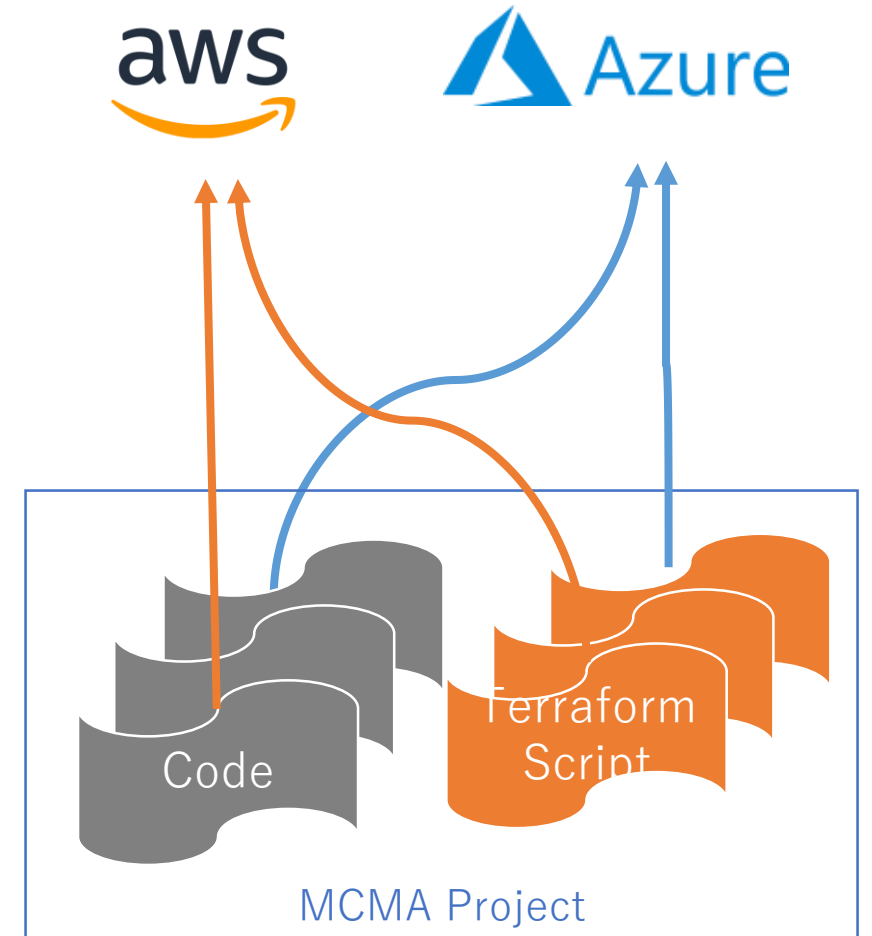
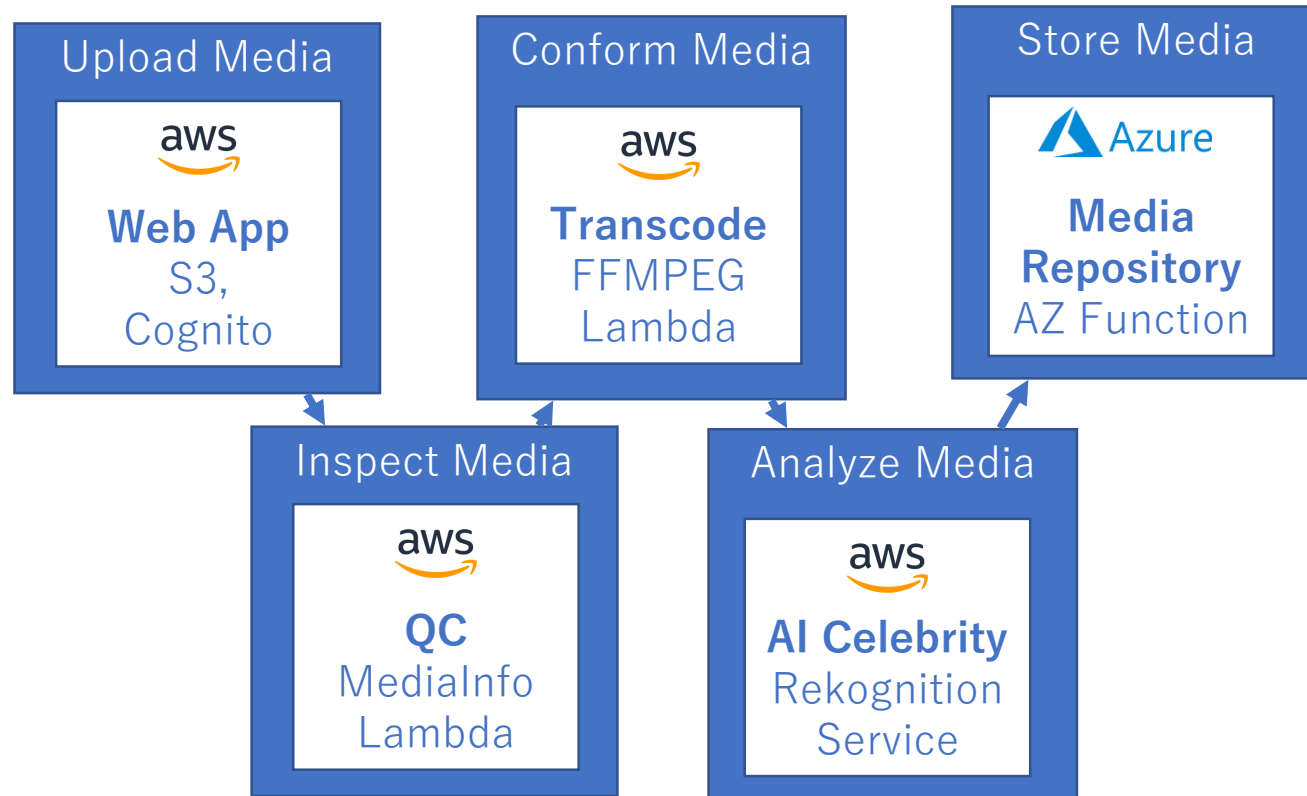


Demo 2: Celebrity and Emotion Detection

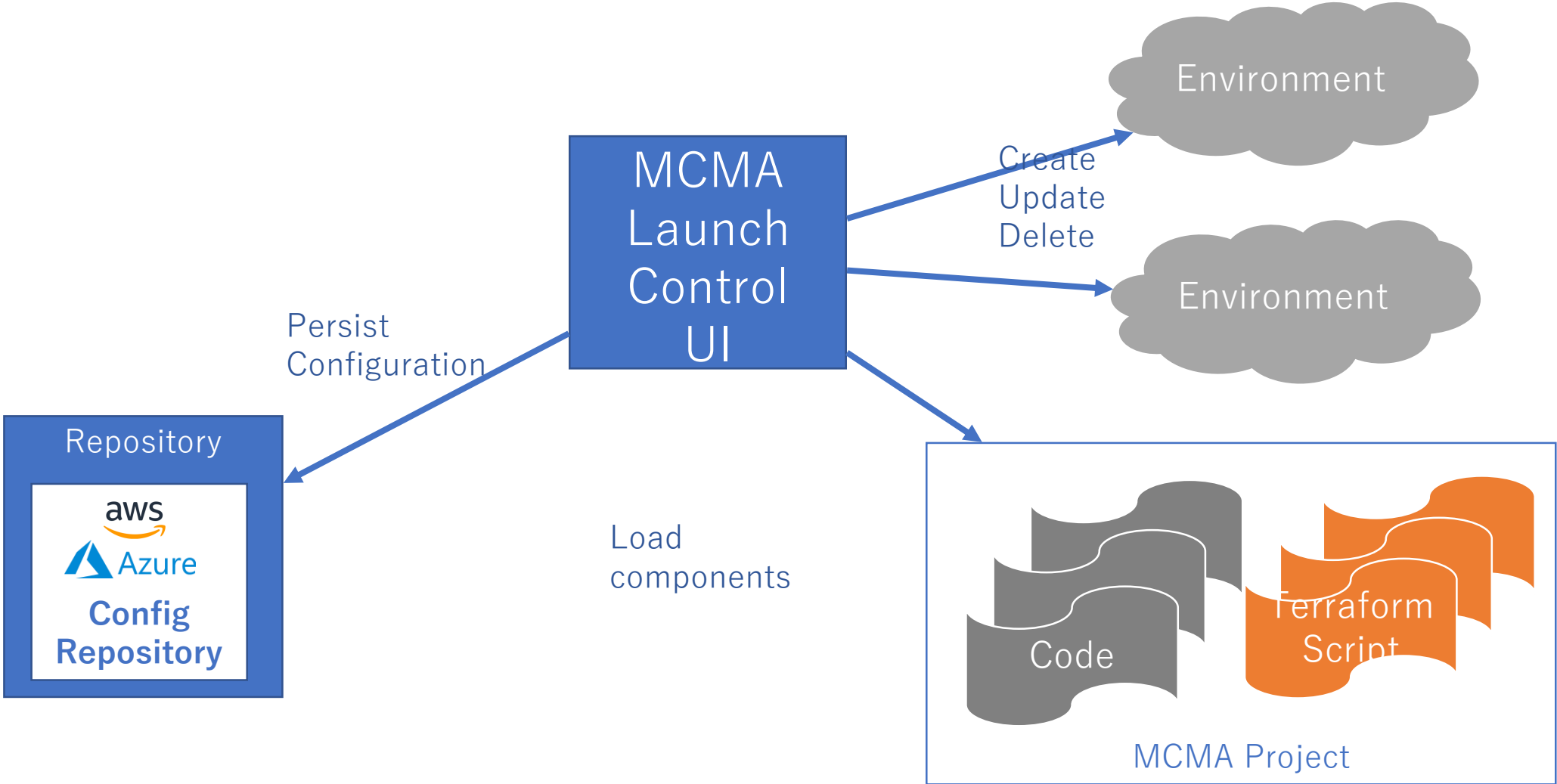
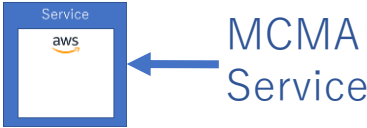


- The Celebrity and Faces services outputs are filtered and combined to generate averaged emotions for each celebrity

Demo 3: Cross cloud workflow



Demo 4: MCMA Launch Control



Demo 4: MCMA Launch Control

The screenshot displays the MCMA Launch Control interface. At the top, there is a navigation bar with a hamburger menu icon, the text 'MCMA Launch Control', and a 'Light' theme selector. A left sidebar contains 'Dashboard' and 'Projects' options. The main content area is titled 'Project Ingest Workflow' and contains two tables: 'Components' and 'Deployments'. The 'Components' table lists 'service-registry' and 'upload-bucket'. The 'Deployments' table lists 'dev' and 'qa'. An 'Edit Component' dialog box is open, showing the configuration for the 'service-registry' component. The dialog includes fields for 'Code' (service-registry), 'Display Name' (Service Registry), and 'Module' (AWS MCMA Service Registry). It also lists variables: 'module_prefix' (\${var.project_prefix}.service-registry), 'stage_name' (\${var.stage_name}), 'aws_account_id' (\${var.aws_account_id}), and 'aws_region' (\${var.aws_region}). At the bottom of the dialog are 'CANCEL' and 'OK' buttons. In the background, a table with an 'ADD' button and another table with 'Status' and 'Status Message' columns are visible.

MCMA Launch Control Light

Dashboard Projects

Project Ingest Workflow

Components

Code	Display Name
service-registry	Service Registry
upload-bucket	Upload Bucket

Deployments

Code	Display Name
dev	Development
qa	Quality Assurance

Edit Component

Code: service-registry

Display Name: Service Registry

Module: AWS MCMA Service Registry

Variables

module_prefix: \${var.project_prefix}.service-registry

stage_name: \${var.stage_name}

aws_account_id: \${var.aws_account_id}

aws_region: \${var.aws_region}

CANCEL OK

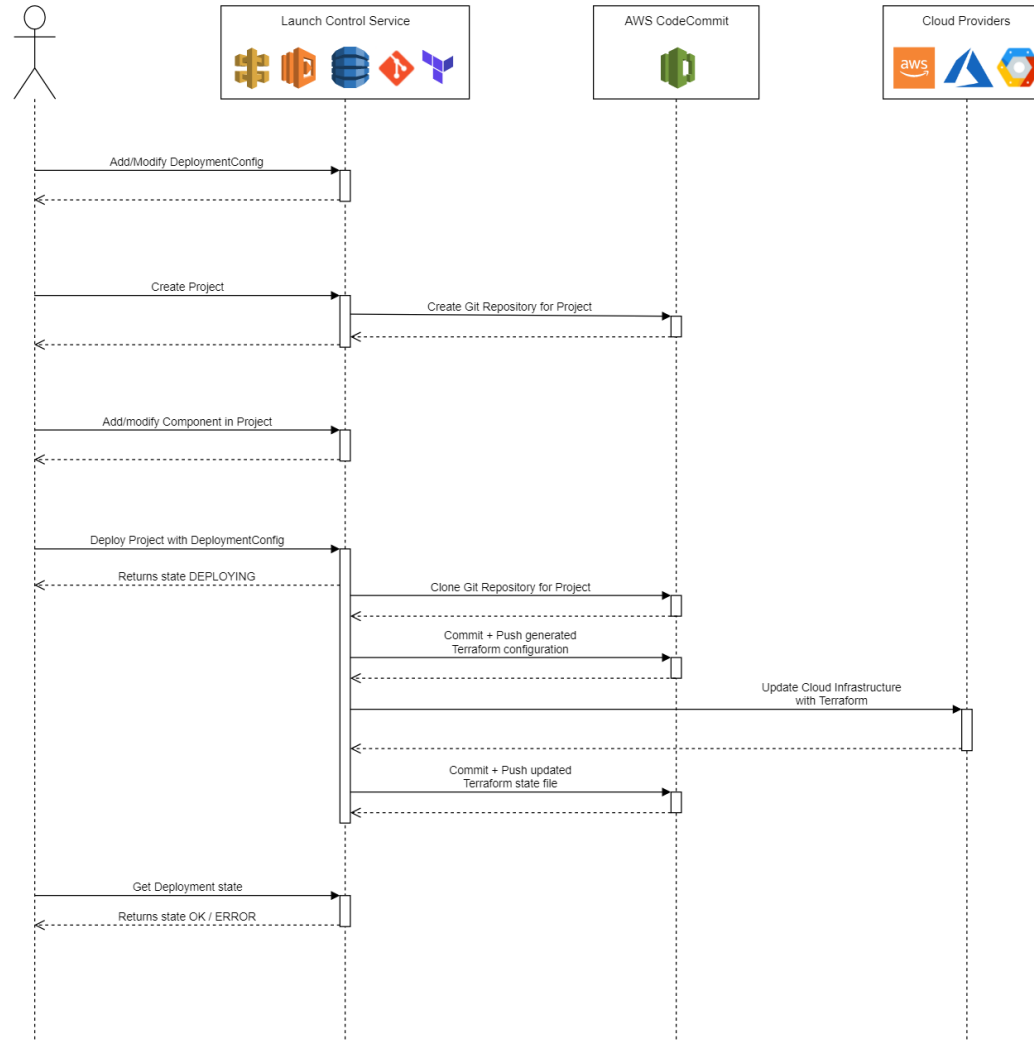
ADD

Actions
[Edit] [Delete]
[Edit] [Delete]

Status	Status Message	Actions
OK		[Refresh] [Delete]
		[Refresh] [Delete]

Demo 4: MCMA Launch Control

MCMA Launch Control Simplified Sequence Diagram



Join us!

MCMA is a voluntary collaborative effort

We need more resources to go faster and share more useful resources

If you are an architect, you certainly want to know more about service-based architectures (if not already convinced)

If you are a developer, system integrator, you will certainly appreciate working with other competent and motivated colleagues eager to share knowledge. This will make the learning curve smoother using best practice development software platforms.

How can you join:

1. Visit <https://tech.ebu.ch/groups/mcma>
2. Click on “join this group”
3. Alternatively contact EBU -> evain@ebu.ch