PREMiƎRE
Performing arts in a new era

D5.1–Data and streaming Infrastructure (v1)

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Project no. 101061303
PREMIERE

Performing arts in a new era: AI and XR tools for better understanding, preservation, enjoyment and accessibility

HORIZON-CL2-2021-HERITAGE-01

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Executive Summary

The document outlines a comprehensive pilot implementation plan for the CMS for Premiere. The CMS will serve as the digital backbone, efficiently managing diverse content types related to dance and theatre performances. The plan covers various use cases and architectural components, with a focus on meeting specific functional requirements. The document aims to provide an overview of the CMS implementation plan.

General Planning:

This chapter explores the development and integration of a tailored CMS for PREMIERE. The CMS is designed to support the entire lifecycle of performances, including diverse content types such as "Live" performances, XR, and 3D technologies, with a particular focus on dance and theatre.

Architecture Overview:

In this chapter, we delve into the operation of the CMS in the context of PREMIERE. The CMS is strategically embedded within a structured permissions framework, providing meticulous control over content creation and management. Additionally, it harnesses the capabilities of a GraphQL API to ensure the efficient and controlled retrieval of stored information. The streaming technology that will be used in PREMIERE is also described in this chapter, which provides an overview of this integrated approach, with subsequent sections delving into each aspect in detail.

Use Case 1 - Performing Arts Archives browsing enhanced with AR/VR technologies - Architectural Overview:

This section provides an architectural overview of the Archive browsing Management use case. It outlines the key components and summarizes the functional requirements for managing and viewing in the 3VT the archived content.

Use Case 2 - Live performance enhanced with VR technologies - Architectural Overview:

Here, you'll find an architectural overview of the Live Performance use case, detailing the components and functional requirements related to managing live performance content and viewing in the 3VT.

Use Case 3 - Actor/Dancer Virtual Co-creation Performance - Architectural Overview:

This section presents an architectural overview of the Virtual Co-creation Performance use case. It explains the components involved and summarizes the functional requirements for accessing rehearsal content.

Use Case 4 - Dance-based artistic creation environment - Architectural Overview:

This part introduces the Dance-Based Artistic Creation Environment use case. It provides an overview of the architectural components and functional requirements for this environment.

Acronyms and abbreviations

Abbreviation	Description
CMS	Content Management System
3VT	3D Virtual Theatre
API	Application Programming Interface
XR	EXtended Reality

1. Introduction

PREMIERE is on a mission to usher the world of performing arts into a new era, where the rich tapestry of dance and theatre is seamlessly intertwined with cutting-edge digital technologies. In a world where live performances are celebrated for their uniqueness, PREMIERE acknowledges the challenge of preserving and sharing these invaluable cultural treasures with future generations.

This Content Management System (CMS) implementation plan focuses on how the CMS will facilitate the management of "Live," "Rehearsal," and "Legacy Content (from archives)", within the project, particularly in the context of presentations at T5.3 - 3D Virtual Theatre (3VT) in various venues. This plan outlines the objectives, features, expected impact, and coordination efforts related to the CMS implementation, emphasizing its role in preserving and enhancing the accessibility of performing arts in the digital age. The main objectives of the CMS are:

- **Comprehensive Content Management:** A robust CMS that comprehensively manages diverse content categories, including "Live," "Rehearsal," and "Legacy" (Archive Content) for presentation in the 3VT across various venues.
- **Enhanced Accessibility:** Enhances the accessibility of performing arts content to diverse audiences, bridging the gap between traditional live performances and digital experiences.
- **Efficient Lifecycle Support:** Facilitates the entire lifecycle of performing arts productions, from content creation to preservation, by integrating cutting-edge digital technologies and seamless management tools.
- **Tailored Presentation:** It enables tailored and immersive presentations of "Live" performances, "Rehearsal" materials, and "Legacy" content within the 3VT, optimizing the viewer's experience.
- **User-Centric Design:** Implements a user-centric design approach, ensuring that artists, teachers, administrators, and audiences find it intuitive, user-friendly, and responsive to their needs.
- **Developer-Friendly Approach:** It fosters a developer-friendly environment by making the CMS available through an API, enabling developers to create custom extensions and integrations, further enhancing the CMS's capabilities and adaptability.
- **Scalability:** Is designed to be scalable, allowing for future growth and the addition of new features to accommodate evolving content and user needs.
- **Preservation of Cultural Heritage:** It recognizes the importance of preserving and showcasing cultural heritage through digital means, contributing to the continuation and accessibility of performing arts for future generations.

2. General Planning

The CMS, which is Key central to PREMIERE, aligns closely with other PREMIERE components. It serves as the backbone for managing and presenting performing arts content in the 3VT. The CMS is interlinked with deliverables related to the development of digital tools, content creation, and audience engagement strategies.

- **Overall Timeline:** The project adheres to a well-structured timeline that encompasses both the requirements gathering and development phases. In the initial requirements gathering phase, extensive consultations take place with stakeholders, including

artists, content creators, and technical experts. These inputs guide the subsequent development phase, which focuses on iterative design, testing, and refinement.

- **Engagement with Target Communities:** A cornerstone of PREMIERE is its engagement with target communities. This engagement extends to artists, performers, administrators, and, most importantly, audiences. The project recognizes that its success depends on meaningful collaboration with these communities. Regular feedback loops are established to incorporate user insights and preferences into ongoing development efforts.

- **Ethics:** Ethical considerations are woven into the fabric of PREMIERE. The handling of data, intellectual property rights, and ethical content management are fundamental principles guiding project activities. Data privacy and protection are paramount, and the project is committed to compliance with relevant data protection regulations. Upholding ethical standards in content handling, especially in the digital realm, is a fundamental commitment.

3. Data & Streaming Infrastructure
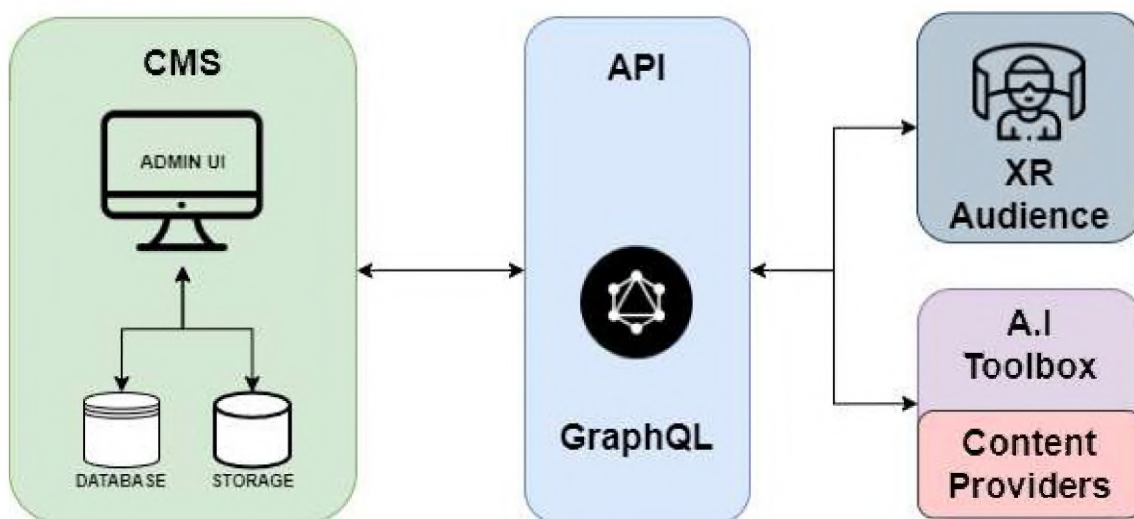
3.1. Overview

Figure 1 Diagram of CMS Architecture

An overview of the CMS is illustrated in Figure 1. The CMS operates within a structured permissions framework to control access to content creation and management. Additionally, it leverages a GraphQL API to ensure efficient and controlled access to the stored information. Below is an overview of this integrated approach, next will enter in detail each point:

- **Users Roles:** Specialised user roles tailored to manage and interact with different types of data and content segments. These provide a nuanced approach to controlling access and responsibilities within the CMS environment.

- **GraphQL API Integration:** The CMS extends its functionality by integrating a GraphQL API. GraphQL provides a flexible and efficient means to access, query, and manipulate content stored in the CMS. This API-driven architecture allows authorized users, applications, and systems to interact with the CMS programmatically.

- **Controlled Access via GraphQL API:** The GraphQL API enforces access control based on user permissions defined within the CMS. The Content Providers, A.I. Toolbox, and 3VT must authenticate and provide appropriate credentials when accessing the GraphQL API endpoint. Access to specific content and operations (e.g., retrieving live content, filtering performances, checking for subtitles) is determined by the user's role and permissions.
- **Secure Data Retrieval and Modification:** Authorised users can use GraphQL queries and mutations to retrieve and modify content availability while adhering to their prescribed permissions. GraphQL's fine-grained control ensures that users only receive the data they are authorised to access. This secure approach protects sensitive content and maintains the integrity of the CMS.
- **User Interface:** The design of the User Interface (UI) of the CMS is a collaborative effort with the PREMIERE team, ensuring that the CMS aligns with the project's goals and evolves in response to changing requirements, providing the best possible experience to the users.
- **Scalable:** The CMS is user-centric and scalable, can handle increased content, user volumes, and traffic without compromising performance. Using load balancing, resource management, and database scalability techniques, the CMS has upgradable features and performance features, for delivering the best experience to the users of PREMIERE,

The PREMIERE XR application that users open to experience PREMIERE XR content operates on cloud servers and employs a XR streaming solution to deliver immersive experiences through users' XR headsets. Whether it's developed using Unreal's Pixel Streaming (Figure 4) or Nvidia's CloudXR (Figure 5) solutions, the XR streaming component and the CMS remain entirely separate.

The PREMIERE app establishes a connection with the CMS to request and process a substantial amount of data from both the CMS itself and the real-time data provided by 3VT. The XR streaming solution then takes the results of this processing, along with input from the user's VR headset, renders the content, and streams it using the specific protocols and codecs implemented by each solution.
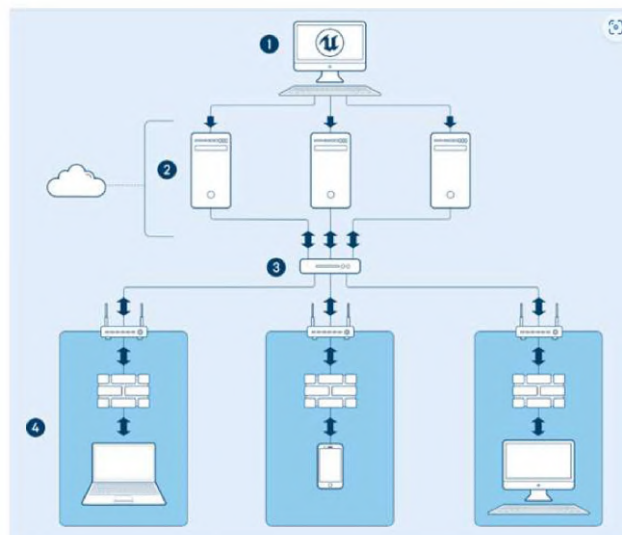

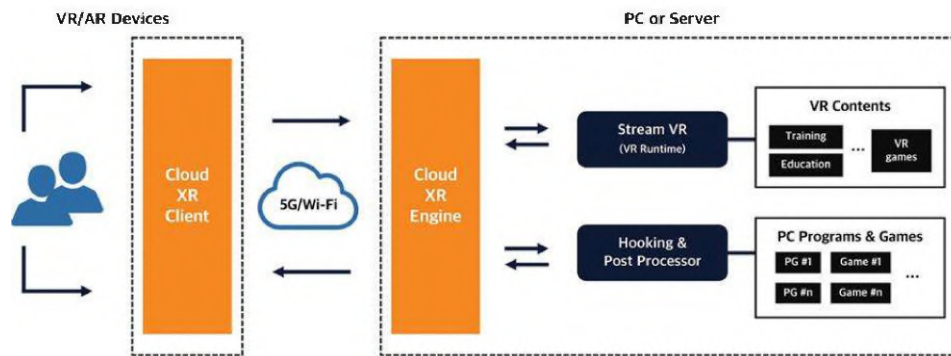*Figure 4 Architecture of Pixel Streaming Solution (C) Epic Games, Inc*

Figure 5 Architecture Architecture of Cloud XR Solution (C) immersivecast Inc

3.2. User roles

Users Roles represent specialised user roles specifically tailored to manage and interact with different types of data and content segments. Data Roles provide a nuanced approach to controlling access and responsibilities within the CMS environment. Here's a closer look at Users Roles:

- **Segmentation of Data:**
  - *Content Categories:* The CMS classifies content into distinct categories or segments, such as "Live," "Rehearsal," and "Legacy" (Archive Content), each with unique characteristics and purposes.
  - *Users Roles:* Users are designed to align with these content categories, ensuring that users with specific responsibilities can access and manage content within their designated areas.
- **Role-Based Expertise:** Each Data Role is associated with a particular expertise or responsibility.
  - *Live:* Users in this role are primarily responsible for overseeing and managing "Live" performance content availability, including real-time updates and audience engagement features.
  - *Rehearsal:* Users in this role focus on organising and preserving "Rehearsal" materials, ensuring their availability for future reference and analysis.
  - *Legacy:* These users curate and maintain content availability for the archives ("Legacy"), which includes Dance and Theatre performances from the FIT and FDA and related materials.
- **Access Control:**
  - *Role-Content Mapping:* User Roles are tightly linked to content categories, mapping specific roles to corresponding data segments.
  - *Granular Permissions:* Permissions within each User Role are granular, allowing for fine-tuned control over what actions users can perform within their designated content area.
- **Collaboration and Workflow:**
  - *Collaboration Benefits:* User Roles enable efficient collaboration by ensuring that individuals with the relevant expertise manage content in their area of specialisation.
  - *Streamlined Workflow:* Users can focus on their specific responsibilities, streamlining content management and optimising workflow efficiency.
- **Adaptability and Scalability:**

- o *Role Expansion:* As the PREMIERE evolves or additional content categories emerge, new User Roles can be defined to accommodate changing needs.
- o *Scalable Permissions:* The CMS can scale by adding or modifying User Roles to meet evolving requirements without disrupting existing workflows.
- **Compliance and Data Integrity:**
  - o *Data Governance:* User Roles play a crucial role in data governance, ensuring that content is managed in compliance with regulatory standards and PREMIERE specific policies.
  - o *Data Protection:* By assigning User Roles, sensitive content remains protected, reducing the risk of unauthorised access or tampering.

User Roles in the PREMIERE CMS represent a specialised approach to user access and responsibilities. They are closely tied to content categories and enable efficient, compliant, and adaptable content management. User Roles ensure that content within each category is managed by individuals with the appropriate expertise, contributing to a structured and secure content management environment.

3.3. Content edition and management

Content Editors, who have the necessary permissions to use the CMS's user-friendly interfaces, can edit and manage a diverse range of performing arts materials, including text, images, videos, and metadata. This dynamic process is at the heart of the project's mission to modernize the field of performing arts by leveraging advanced digital technologies.

Figure 6 Workflow of Content

Draft: The draft phase allows for meticulous planning, research, and collaboration among team members, ensuring content accuracy and relevance before publication.

Publish: Authors could publish content when it meets predetermined criteria, such as quality standards or strategic timing. This ensures that content is made available to audiences at the right time.

Unpublish: The "Unpublish" option allows for the temporary or permanent removal of content from public view, supporting error correction, updates, or content withdrawal.
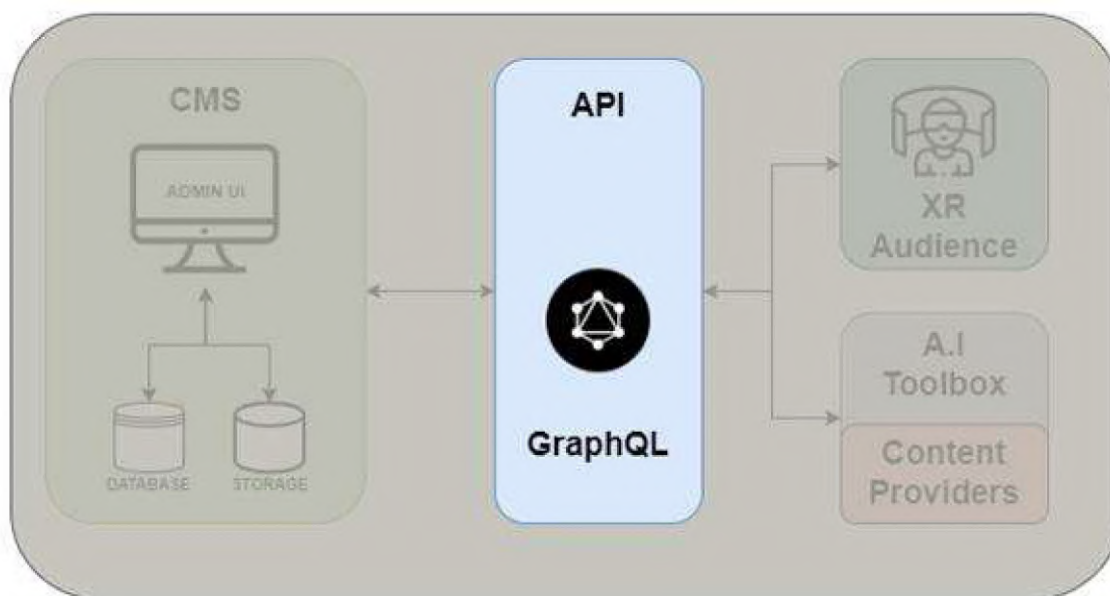
3.4. GraphQL API Integration

Figure 7 GraphQL API Integration

The CMS extends its functionality by integrating a GraphQL API. GraphQL provides a flexible and efficient means to access, query, and manipulate content stored in the CMS. This API-driven architecture allows authorised users, applications, and systems to interact with the CMS programmatically. Using the GraphQL API, will ensure the following:

- **Enhancing CMS Functionality:** The CMS within the PREMIERE extends its capabilities by seamlessly integrating a GraphQL API. This integration serves as a pivotal enhancement, enabling more flexible and efficient interactions with the content stored in the CMS.
- **Flexibility in Data Access:** GraphQL is renowned for its flexibility in data access. With GraphQL, users, whether they are content creators, editors, or external applications, can craft precise and tailored queries to access the exact information they require. This level of granularity ensures that data retrieval is optimised for each specific use case.
- **Efficient Querying and Manipulation:** GraphQL's query optimisation capabilities contribute to efficient data retrieval. Users can request only the fields and resources they need, reducing the amount of data transferred over the network. This efficiency is particularly valuable when dealing with multimedia content, such as videos and images commonly found in performing arts materials.
- **Controlled Access:** The GraphQL API is designed to enforce access control and authorisation. This means that only users with the appropriate permissions can access, query, and manipulate content. Fine-grained access control ensures that sensitive or restricted content remains protected.

3.5. User interface design

Its UI design is carefully crafted to address the unique challenges and opportunities presented by the performing arts domain, digital technologies, and the preservation of cultural heritage. Here's a deeper exploration of this crucial aspect:

- **Purpose-Built Functionality:** Rather than being a generic content management platform, the CMS is purpose-built. It houses functionality that directly supports the

project's objectives, such as managing live performances, archiving legacy content, and providing a user-friendly interface for content creators and editors.

- **User-Centric Approach:** Usability is a core principle of the CMS design. It adheres to a user-centric approach. User feedback is actively solicited and incorporated into the design process, leading to an interface that resonates with the end users.
- **Scalability and Adaptability:** Recognising the evolving nature of the PREMIERE, the CMS is designed for scalability and adaptability. It can accommodate the growth of content, users, and emerging project goals without compromising performance or accessibility.

4. Relation to the Use Cases

4.1. Use case 1 - Performing Arts Archives browsing enhanced with AR/VR technologies

4.1.1. Overview

Use Case 1 focuses on the specialised role of managing legacy archive content within the digital performing arts ecosystem. This use case is dedicated to ensuring the preservation, organisation, and accessibility of historical performance materials through a GraphQL API-driven architecture.

4.1.2. Architecture components

Archive Content Database:
- The Archive Content Database stores the historical performance materials, including video recordings, documents, and multimedia files.
- Metadata associated with each piece of content, such as performance date, location, artists, and subtitles, is indexed and organised within the database.
- The GraphQL API interacts with the Archive Content Database to retrieve and serve content based on user queries.

Metadata Tagging and Indexing:
- A robust metadata tagging and indexing system is in place to categorize and describe archived materials comprehensively.
- Metadata tags are associated with each piece of content, allowing users to search for content based on attributes like genre, era, language, and more.
- The GraphQL API leverages this metadata system to facilitate efficient content organisation and retrieval.

Preservation Protocols:
- Preservation protocols are integrated into the architecture to ensure the longevity and integrity of archived materials.
- This includes digitisation processes, content migration strategies, and data format.

4.1.3. CMS functional requirements for use case 1

Metadata Access:
- Users should be able to access detailed metadata associated with each piece of archived content.

- Metadata should include information such as performance date, location, artists, subtitles, and other relevant attributes.

Content Filtering:
- Users should be able to filter content to identify specific features or attributes, such as content with subtitles.
- Filtering options should provide a way to refine search results.

Content Visualisation:
- Users should have the ability to view archived content, including video recordings, documents, and multimedia files.
- Content visualisation should support various formats and media types.

Content Management:
- Authorised users should be able to manage archived content, including updates, deletions, and metadata modifications.
- Management actions should align with preservation protocols to ensure data integrity.

4.1.4. CMS evaluation for use case 1

The evaluation of the performing arts archives browsing use case is critical to ensuring that it meets its objectives and effectively manages archive content within the digital performing arts ecosystem. The evaluation process should consider various aspects of the use case's performance and impact. Here are key points to consider in the evaluation:

- **Efficiency and Performance:** Measure the efficiency of the Archive Content Management system in responding to user queries and content retrieval. Assess the system's performance, including response times and data retrieval speed.
- **Data Integrity:** Evaluate the effectiveness of preservation protocols in maintaining data integrity and ensuring the longevity of archived materials. Check for data corruption or loss over time.
- **Metadata Organisation:** Access the metadata tagging and indexing system's effectiveness in categorising and describing archived materials. Determine if metadata tags accurately reflect the content and enhance search ability.
- **Security and Access Control:** Review the security measures, including user authentication and authorisation mechanisms. Ensure that only authorised users can access and manage archive content.
- **Content Visualisation:** Evaluate the user experience when visualising archived content, including video recordings and documents. Ensure that content is accessible in various formats and media types.
- **Management of Content:** Assess the ease of managing archived content, including updates, deletions, and metadata modifications. Ensure that content management aligns with preservation protocols.
- **Scalability:** Consider the system's scalability to handle a growing volume of archived materials and increasing user demands.

The evaluation should be an ongoing process, with periodic assessments conducted throughout the development and deployment phases. It is essential to involve stakeholders and users in the evaluation process to ensure that the Archive Content Management use case effectively fulfils its role within the digital performing arts ecosystem.

4.2.   Use case 2 Live performance enhanced with VR technologies

4.2.1.   Overview

Use Case 2 centres on the specialised role of managing availability of live content within the digital performing arts ecosystem. It is dedicated to ensuring seamless content delivery, user engagement, and dynamic access to live performances through a GraphQL API-driven architecture.

4.2.2.   Architecture components

GraphQL API for Dynamic Content Retrieval:
- At the core of the architecture, a GraphQL API is implemented to enable dynamic content retrieval.
- Viewers can craft custom queries to select, filter, and retrieve live content based on their preferences.

Live Content Repository:
- A dedicated repository stores live performances, including video streams, audio recordings, and associated metadata.
- Metadata includes performance date, venue, artists, and subtitle information.

Metadata Indexing and Enrichment:
- A metadata indexing and enrichment engine enhances content discoverability.
- Metadata is tagged with additional information, such as genre, language, and viewer ratings.
- Subtitle status (presence and language) is part of the enriched metadata.
- A.I Toolbox content for live performance.

4.2.3.   CMS functional requirements for use case 2

Metadata Access:
- Users should be able to access detailed metadata associated with each piece of archived content.
- Metadata should include information such as performance date, location, artists, subtitles, and other relevant attributes.

Content Filtering:
- Users should be able to filter content to identify specific features or attributes, such as content with subtitles.
- Filtering options should provide a way to refine search results.

Content Visualisation:
- Users should have the ability to view archived content, including video recordings, documents, and multimedia files.
- Content visualisation should support various formats and media types.

Content Management:
- Authorised users should be able to manage archived content, including updates, deletions, and metadata modifications.
- Management actions should align with preservation protocols to ensure data integrity.

4.2.4. CMS evaluation for use case 2

The evaluation of Use Case 2, which focuses on managing live content within the digital performing arts ecosystem, is crucial to assess its effectiveness in achieving its objectives and meeting user needs. Here are key evaluation considerations:

GraphQL API Efficiency: Assess the efficiency of the GraphQL API for dynamic content selection and filtering. Evaluate query response times, error rates, and query complexity.

Metadata Completeness: Ensure that metadata for live performances, including performance date, venue, artists, and subtitles, is complete and up-to-date.

4.3. Use case 3 Actor/Dancer Virtual Co-creation Performance

4.3.1. Overview

This use case aims to create a software environment that empowers artists and choreographers in the field of dance by leveraging advanced technologies, including a GraphQL API and a Content Management System (CMS). The primary goal is to facilitate dance-based artistic creation while ensuring efficient content access, management, and synchronisation.

4.3.2. Architecture components

GraphQL API for Content Access:

- The GraphQL API offers a versatile interface for accessing a wide array of content, including AI-generated dance sequences, historical dance performances, choreography patterns, and more.
- Users can craft GraphQL queries to select, filter, and retrieve content based on specific criteria.

Rehearsal Content Repository:
  - A dedicated repository stores rehearsal performances, including video streams, audio recordings, and associated metadata.
  - Metadata includes performance date, venue, artists, and subtitle information.

4.3.3. CMS functional requirements for use case 3

Content Selection and Filtering:
- Implement dynamic content selection and filtering through GraphQL queries.
- Users can filter content based on rehearsal date, location, performers, scenes, subtitles, annotations, and more.

Metadata Retrieval:
- Enable users to retrieve detailed metadata for each rehearsal session.
- Metadata includes rehearsal date, location, performers, scenes, and timestamped subtitles and annotations.

GraphQL API Interface:
- Develop a GraphQL API with defined schemas and queries to facilitate content retrieval.
- Ensure that the API supports complex queries for precise content selection.

Search and Discovery:
- Implement a robust search and discovery mechanism for rehearsal materials.
- Users can search for content by keywords, attributes, or a combination of criteria.

4.3.4.   CMS evaluation for use case 3

The evaluation of the use case for accessing Rehearsal Content through a GraphQL API is critical to determine its effectiveness, user satisfaction, and system performance. Here are key aspects to consider in the evaluation:

Content Retrieval Speed: Measure the speed at which users can retrieve rehearsal content through GraphQL queries. Evaluate query response times and the efficiency of content retrieval.

GraphQL API Efficiency: Assess the efficiency of the GraphQL API for dynamic content selection and filtering. Evaluate query response times, error rates, and query complexity.

Metadata Completeness: Ensure that metadata for rehearsal materials, including performance date, venue, artists, and subtitles, is complete and up-to-date.

4.4.   Use case 4 - Dance-based artistic creation environment

4.4.1.   Overview

This use case aims to empowers artists and choreographers in using the A.I Toolbox in the Use Case 4. The primary goal is to facilitate dance-based artistic creation with AI while ensuring efficient content access, management, and synchronisation.

4.4.2.   Architecture components

GraphQL API for Content Access:
- The GraphQL API offers a versatile interface for accessing a wide array of content, including AI-generated dance sequences, historical dance performances, choreography patterns, and more.
- Users can craft GraphQL queries to select, filter, and retrieve content based on specific criteria.

Content Management System:
- The CMS serves as a centralised repository for managing and organising content, including dance performances, AI-generated sequences, subtitles, annotations, and metadata.
- Content within the CMS can be categorised, tagged, and associated with specific performances.

4.4.3.   CMS functional requirements for use case 4

Content Access and Retrieval:

- Users must be able to select and access diverse dance-related content, including performances, AI-generated sequences, historical archives, and choreography patterns.
- Support GraphQL queries for specifying content criteria, such as dance genre, date, artist, and more, for precise content retrieval.
- Enable content filtering based on attributes like dance style, choreographer, location, and language.

Performance and Scalability:
- Evaluation of performance metrics, including content retrieval speed, query complexity handling, and response times for GraphQL queries.
- Scalability to accommodate an increasing volume of users and content without degradation in performance.
- Scalability also with regards to the amount of data that is retrieved with the purpose of building datasets for training AI models

GraphQL API Interface:
- Develop a GraphQL API with defined schemas and queries to facilitate content retrieval.

- Ensure that the API supports complex queries for precise content selection.

Search and Discovery:
- Implement a robust search and discovery mechanism for rehearsal materials and other data in order to train AI models of the AI toolbox.
- Users can search for content by keywords, attributes, or a combination of criteria.

4.4.4. CMS evaluation for use case 4

The evaluation of the Dance-Based Artistic Creation Environment use case with API and CMS encompasses several critical aspects to assess its effectiveness and performance.

Content Retrieval Speed: Measure the speed at which users can retrieve rehearsal content through GraphQL queries. Evaluate query response times and the efficiency of content retrieval.

Scalability and Future Growth: Evaluate the system's ability to scale and accommodate an increasing volume of users, content, and creative projects. Ensure that the system can adapt to evolving content and user needs over time.

GraphQL API Efficiency: assess the efficiency of the GraphQL API for dynamic content selection and filtering. Evaluate query response times, error rates, and query complexity.

5. Implementation plan

The final version of the CMS will be delivered by M30 (D5.2-PREMIERE data and streaming infrastructure v2). The implementation plan for reaching the final version is divided into three phases that correspond to three intermediate sub-versions:

Phase 1 – M13:M18: initial version (sv1): This sub-version will implement basic functionalities of the CMS and will be up and running. It will be as testbed for building the

first version of the pilot applications. These functionalities will include a basic API interface for accessing the data and will allow metadata storage based on the data model described in D6.1 - Data Indexing.

Phase 2 – M19:M24: intermediate version (sv2): This sub-version will be developed towards two directions: a) implement additional functionalities from sv1 towards the final version and b) be ready and stable to facilitate the 1st version of the use cases with the functionalities of sv1. The functionalities of the CMS should be also refined based on the outcomes of the D2.2 - User Requirements v2 (M18)

Phase 3 – M25:M30: final version (v2): This version will be the final version the platform, should include all the functionalities and be stable and running.

6. Conclusion

This deliverable reports the first version of the Data & Streaming Infrastructure, as established by consortium partners and representative users in the first 12 months of the PREMIERE and corresponds to delivery T5.1. This deliverable reports the status of the CMS & Streaming Infrastructure. For the CMS we describe the requirements for development and the API connection to the PREMIRE. For the Streaming Infrastructure, we describe two possible solutions to be adopted for PREMIERE to fulfil the requirements described in delivery D2.7.

The PREMIERE platform builds on the expertise of PREMIERE team. The CMS of the PREMIERE platform is described in the design showing off multiple components connected to allow performance, scalability and a workflow that allows to fulfil the 4 uses cases present in PREMIERE project, in a single APP PREMIERE XR for the end user.

The Data & Streaming Infrastructure of the PREMIERE platform must accommodate the requirements and priorities of many different stakeholders inside of the PREMIERE. To accommodate this, we collected Data & Streaming Infrastructure requirements from relevant parties. We give an overview of the CMS & Streaming Infrastructure, technology to adopt, integrations to develop, and software and data schema to develop/adopt.

For the second version of this deliverable, we will focus on showing the result of both solutions proposed for the Streaming Infrastructure, described in this deliverable. Unreal's Pixel Streaming and Nvidia's CloudXR will be tested to fulfil the PREMIERE requirements in delivery D2.7-Technical specifications and integration, one of which will be elected for PREMIERE. We will also present the final version of the CMS.

The PREMIERE partners, along with a technical expert, will refine the CMS & Streaming Infrastructure and document additional technical specifications based on their implementation experiences during the development.