|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A black and white logo  Description automatically generated | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2025-2028 | | SG21-C-0015 | | |
| STUDY GROUP 21 | | |
| Original: English | | |
| **Question(s):** | | 9/21 | | Geneva, 13-24 January 2025 | |
| **CONTRIBUTION** | | | | | |
| **Source:** | | University of Electronic Science and Technology of China | | | |
| **Title:** | | H.OIMSArch: Updates to clause 7.2 | | | |
| **Contact:** | | Shizhong Xu University of Electronic Science and Technology of China, China | | | Tel: +86-28-61830256 E-mail: [xsz@uestc.edu.cn](mailto:xsz@uestc.edu.cn) |
| **Contact:** | | Jing Ren  University of Electronic Science and Technology of China, China | | | Tel: +86-28-61830256 E-mail: [renjing@uestc.edu.cn](mailto:renjing@uestc.edu.cn) |
| **Contact:** | | Sheng Wang University of Electronic Science and Technology of China, China | | | Tel: +86-28-61830256 E-mail: [wsh\_keylab@uestc.edu.cn](mailto:wsh_keylab@uestc.edu.cn) |

|  |  |
| --- | --- |
| **Abstract:** | This contribution contains the updated clause 7.2 of the draft Recommendation ITU-T H.OIMSArch: "Architecture for on-demand service based on interactive multimedia streaming", updating the functional units of OIMS. The baseline text is found in SG16-TD156/WP1 (2023-07). |

## 7.2 Functional units

This clause defines the OIMS functional units for the global scheduling node and worker node.

* + 1. **Functional units for the global scheduling node**

The global scheduling node is designed to handle users’ access requests and orchestrate worker nodes to deliver on-demand services. It consists of three modules, i.e., demand scheduling module, endorsement management module, and authentication module.

The demand scheduling module is responsible for coordinating suitable worker nodes to provide services to users based on the specific content of user demand. The demand scheduling module will use some scheduling strategies (e.g., ML reasoning) to arrange appropriate worker nodes to provide services to users based on the information of each worker node provided by the endorsement management module. After obtaining the scheduling results, the demand scheduling module will notify the application instance manager module on the corresponding rendering worker nodes to initiate pre-execution preparations.

The endorsement management module is responsible for maintaining the status of all worker nodes in the entire system, which can be divided into two parts: historical endorsement management and current status management. Historical endorsement refers to the service records provided by each worker node in history. The specific information includes the service type, service quality, service load, and other details. This information is stored in a relational database. Such information is part of the basis for the demand scheduling module to schedule worker nodes for user demands. Additionally, the current status refers to the current online status of each worker node, including workload, geographical location, and other information, which will also be used as reference information for the demand scheduling module. The current status information will also be stored in a relational database.

The authentication module is responsible for authenticating all users and worker nodes that access the platform. Only authenticated worker nodes and users are eligible to provide and access relevant services. Taking user authentication as an example, user registration information will be stored in a relational database, and the request credentials issued to users will be stored in a key-value database. When users send requests to the platform, they need to include the relevant legitimate request credentials. The authentication module will perform authentication based on the credentials provided by the user and the credentials in the key-value database. Only after successful authentication, further responses to user requests will be provided.

* + 1. **Functional units for the worker node**

The worker node is designed to deliver on-demand services to user, which consists of the storage module, APP instance, and worker node resident program.

The w

**Appendix I**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_