 **ISO/IEC JTC 1/SC 29/ WG 11 N19565**

**ISO/IEC JTC 1/SC 29/WG 11**

**Coding of moving pictures and audio**

**Convenorship: Japan (JISC)**

|  |  |
| --- | --- |
| **Document type:** | Approved WG 11 document |
| **Title:** | Evaluation procedure for the Joint Call for  Proposals for extensions and improvements  of ISO/IEC 23092 series |
| **Status:** | Approved |
| **Date of document:** | 2020-07-03 |
| **Source:** | Convenor, ISO/IEC JTC 1/SC 29/WG 11 |
| **No. of Pages:** | 6 |
| **Email of acting convenor** | ostermann@tnt.uni-hannover.de |
| **Committee URL:** | <http://isotc.iso.org/livelink/livelink/open/jtc1sc29> |

**INTERNATIONAL ORGANISATION FOR STANDARDISATION**

**ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC 1/SC 29/WG 11**

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC 1/SC 29/WG 11 N19565**

**Geneva on-line, CH – July 2020**

**Source: Requirements**

**Evaluation procedure for the Joint Call for Proposals for extensions and improvements of ISO/IEC 23092 series**

Table of Contents

[1 Introduction 3](#_Toc44700896)

[2 Encoded bitstreams and test data 3](#_Toc44700897)

[3 Evaluation Procedure 3](#_Toc44700898)

[3.1 General functionality 3](#_Toc44700899)

[3.2 Low complexity coding modes 3](#_Toc44700900)

[3.3 Genome sequence searches in the compressed domain 5](#_Toc44700901)

[4 Selection criteria 5](#_Toc44700902)

[5 References 5](#_Toc44700903)

# Introduction

The Evaluation Procedure described in this document will be used to assess proposals in response to the “Final Joint Call for Proposals for extensions and improvements of ISO/IEC 23092 series.

This assessment will identify both the proposal which will become part of the Test Model 0 (TM0) and other proposals from which a set of technologies will be possibly added to or integrated with the TM0. The addition and integration will be achieved through Core Experiments that will be specified by dedicated MPEG documents. A timetable and the procedure for the verification process are specified in the Call for Proposals.

The objective is to define a new profile for the ISO/IEC 23092 standard series,

It should be noted that the procedure described above implies that proposals will be evaluated whether they fulfill requirements entirely or partially, but also in the case that they provide technology covering only a subset of the requirements.

This Evaluation Procedure will be used by:

* Proponents of technology/solutions for extensions and improvements of ISO/IEC 23092 series, both in answering to the Call for Proposals, and in self-assessing their proposal before submitting it;
* MPEG, to validate the self-assessment of the proponents and proceed to the evaluation of the proposed technologies.

The requirements defined in the Call for Proposals are divided into major needs (specified by a “shall” in the requirement text) and objectives (specified by a “should” in the requirement text). Major requirements shall be met by TM0 while objectives are less stringent even if highly desirable.

# Encoded bitstreams and test data

Encoded bistreams demonstrating the value, performance and satisfaction of the proposed technology shall use the test material specified in: N19561 “MPEG-G Genomic Information Database”

# Evaluation Procedure

This section describes the test cases that will be performed to validate the fulfillment of the requirements listed in the Call for Proposals [1].

## General functionality

Every submission shall clearly state:

1. which data types are supported by proposed technology
2. which performance the proposed technology is providing versus current technology specified in ISO/IEC 23092
3. which new functionality the proposed technology is providing

## Low complexity coding modes

This section describes the process to assess the coding efficiency of submitted solutions for low complexity coding mode.

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | **Input Items** | **Test case steps** | **Reqs** |
| Indicate the ID of the input file used to demonstrate results | Any input file containing sequencing raw data present in the MPEG-G repository as detailed in N19561 “MPEG-G Genomic Information Database” issued at the 131st MPEG meeting | 1. Compress data with new technology 2. compare encoding, decoding performance 3. compare compression rates with current standard ISO/IEC 23092 technology | 4.1.1 to 4.1.10 |

## Genome sequence searches in the compressed domain

This section describes the process to assess the coding efficiency of submitted solutions for sequence searches in the compressed domain.

|  |  |  |  |
| --- | --- | --- | --- |
| **Test case ID** | **Input Items** | **Test case steps** | **Reqs** |
| Indicate the ID of the input file used to demonstrate results | Any input file containing sequencing raw data present in the MPEG-G repository as detailed in N19561 “MPEG-G Genomic Information Database” issued at the 131st MPEG meeting | 1. Convert input file into a compressed representation providing indexing capabilities 2. Assess compression performance (speed and rate) 3. Define querying capabilities (search by sequence, subsequence, read name, wildcard, string, substring, …) 4. Perform queries in the compressed domains 5. Assess querying performance (speed and accuracy) | 4.2.1 to 4.2.4 |

# Selection criteria

Criteria to rank technologies overall will be:

1. New requirements coverage versus current ISO/IEC 23092 technology
2. New functionality coverage versus current ISO/IEC 23092 technology
3. Performance improvement versus current ISO/IEC 23092 technology performance

The proponents are required to characterize the solution on the points above and provide evidence (code, examples, statistics, etc.) of the results.

*Nota bene*: additional measured performance such as:

1. computational complexity
2. processing time
3. memory requirements

might be used to further rank proposals.

# References

|  |  |
| --- | --- |
| [1] | ISO/IEC JTC 1/SC 29/WG 11, “N19563 - Final Joint Call for Proposals for extensions and improvements of ISO/IEC 23092 series,” Geneva - On-Line meeting, June-July 2020. |