

ISO/IEC 18520:2019 (E)

Information technology — Computer graphics, image processing and environmental data representation — Benchmarking of vision-based spatial registration and tracking methods for mixed and augmented reality (MAR)

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms, definitions, acronyms and abbreviated terms
3.1	Terms and definitions
3.2	Acronyms and abbreviated terms
4	Overview of the framework
5	Benchmarking processes
5.1	Overview
5.2	Process and process flow
5.3	Stakeholders
6	Benchmark indicators
6.1	Overview
6.2	Reliability indicators
6.3	Temporality indicators
6.4	Variety indicators
7	Trial set for benchmarking
7.1	Overview
7.2	Dataset for on- and off-site benchmarking
7.3	Physical object instances for on- and off-site benchmarking
8	Conformance
Annex A	(informative) Benchmarking activities ¹ 1 Any names of specific applications, file formats, etc. are given for the convenience of users of this document and do not constitute an endorsement by ISO/IEC.
A.1	Open datasets by an academic community
A.2	Dataset and evaluation for template-based tracking algorithms
A.3	Dataset for outdoor handheld camera localization
A.4	Dataset and evaluation toolkit for mobile augmented reality
A.4.1	General
A.4.2	Data capture
A.4.3	Visualization
A.4.4	Deployment
A.5	Trial set — The City of Sights
A.5.1	General
A.5.2	Model selection, design and construction
A.5.3	Acquisition of video and ground truth data
A.6	Tracking Competition in ISMAR 2014
A.6.1	General
A.6.2	Scenario 1 — Tracking of a rotating vehicle
A.6.3	Scenario 2 — Tracking and learning on different vehicles
A.6.4	Scenario 3 — Tracking with high accuracy

- A.6.5 Scenario 4 — Tracking inside an unknown area
- A.6.6 Evaluation method
- A.7 Tracking Competition in ISMAR 2015
 - A.7.1 General
 - A.7.2 Off-site tracking competition
 - A.7.3 Off-site competition procedure
 - A.7.4 On-site tracking competition
 - A.7.5 On-site competition procedure
 - A.7.6 Device requirements and rules for the on-site competition
 - A.7.7 On-site and off-site competition results
- A.8 Findings from tracking competitions
 - A.8.1 General
 - A.8.2 Findings from the off-site competition
 - A.8.2.1 Benchmark indicator
 - A.8.2.2 Scalability
 - A.8.2.3 Cheating and fine tuning
 - A.8.3 Findings from the on-site competition
 - A.8.3.1 Effects of simplification
 - A.8.3.2 Benchmark indicators
 - A.8.3.3 Measurement process
 - A.8.3.4 Human factor
 - A.8.3.5 Difficulty level design
 - A.8.3.6 Dissemination

Annex B (informative) Usage examples of conformance checklists

Annex C (informative) Conceptual relationship between this document and other standards

Page count: 61