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# Datasheet for Subjective and Objective Quality Assessment Datasets

Nabajeet Barman<sup>\*‡</sup>, Yuriy Reznik<sup>†</sup>, and Maria Martini<sup>‡</sup>

<sup>\*</sup>Brightcove UK Ltd, London, United Kingdom, nbarman@brightcove.com

<sup>†</sup>Brightcove Inc, Seattle, USA, yreznik@brightcove.com

<sup>‡</sup>Kingston University, London, United Kingdom, m.martini@kingston.ac.uk

**Abstract**—Over the years, many subjective and objective quality assessment datasets have been created and made available to the research community. However, there is no standard process for documenting the various aspects of the dataset, such as details about the source sequences, number of test subjects, test methodology, encoding settings, etc. Such information is often of great importance to the users of the dataset as it can help them get a quick understanding of the motivation and scope of the dataset. Without such a template, it is left to each reader to collate the information from the relevant publication or website, which is a tedious and time-consuming process. In some cases, the absence of a template to guide the documentation process can result in an unintentional omission of some important information.

This paper addresses this simple but significant gap by proposing a datasheet template for documenting various aspects of subjective and objective quality assessment datasets for multimedia data. The contributions presented in this work aim to simplify the documentation process for existing and new datasets and improve their reproducibility. The proposed datasheet template is available on GitHub<sup>1</sup>, along with a few sample datasheets of a few open-source audiovisual subjective and objective datasets.

**Index Terms**—QoE, Subjective Assessment, Objective Assessment, Datasets, Databases, Multimedia, Open-Source

## I. INTRODUCTION

Over the past two decades, video streaming has become ubiquitous, with it currently comprising approximately 82% of total internet traffic [1]. This has largely been possible due to the advancements in various aspects of multimedia streaming from improved codecs [2–4] to better CDNs, improved transport, and delivery mechanisms [5, 6] to more powerful and high-quality end-user devices such as smartphones, smart TVs, and laptops. However, for the continued growth of such video streaming services delivering multimedia content over the internet, it is important to ensure that the end user is satisfied with the service’s quality of experience (QoE).

QoE is defined in ITU-T Rec P.10/G.100 [7] as “*The degree of delight or annoyance of the user of an application or service*”. Over the years, there have been numerous research efforts towards the development of various quality metrics and models which can help predict the end-user QoE of the multimedia application as perceived by the end-user [8]. Such quality metrics can vary from simple image quality metrics such as PSNR and SSIM [9] to more complex video quality metrics such as VMAF [10] and ITU-T Rec. P.1204 [11].

One of the reasons behind the advancement of the field of QoE, such as improved QoE models and metrics and QoE-based optimization of video streaming workflow, is due to the creation and availability of open-source datasets, from datasets from the early 2000s, such as VQEG-HD3 [12] and Live VQA [13], to more recent datasets such as AVT-VQDB-UHD1 [14], GamingVideoSET [15], Live YouTube-Gaming [16] and BC-KU MultiScreen Dataset [17].

### A. Motivation

Over the years, many subjective and objective quality assessment datasets have been created and made available to the community [13–24]. In order to streamline and standardize the process of conducting subjective tests and objective quality (model) evaluation, various standards such as ITU-T P.808 [25], ITU-T P.809 [26], ITU-T P.910 [27], ITU-T P.913 [28], ITU-R BT.500 [29], and ITU-T P.1401 [30] have been proposed. Such standards provide detailed recommendations on various aspects, such as the selection of video sequences, subjective test procedure (test environment, participant selection, test methodology, etc.), and model performance evaluation.

However, there is no “standard”/template that outlines the documentation process to describe the various aspects of the dataset. In the absence of such templates, it is left to the creators of the dataset to report the various aspects of the dataset. The absence of a template can inadvertently result in the omission of important information about the dataset. This also shifts the onus of gathering and documenting the information from relevant publication(s) to the end-user, which is time-consuming, tedious, and often non-reproducible.

### B. Prior Work/Efforts

The need for documenting datasets is not exclusive to QoE datasets. For example, data provenance has been studied extensively in other fields, such as in the databases community [31, 32]. Similarly, more recently, many works have focussed on the process of documenting the creation and use of machine learning datasets. Examples of such works include model cards [33] and datasheets [34], which allow the dataset creators to document various aspects of machine learning models and datasets. Such works have found good acceptance in the machine learning community due to their

<sup>1</sup><https://github.com/NabajeetBarman/datasheet-for-qoe-datasets>

high utility in enhancing the communication and transparency between the dataset creator and users.

This paper is inspired by the work of Gebru *et al.* [34], where the authors have presented a datasheet for AI/ML-based datasets. However, the proposed datasheet template (and other similar works) are unsuitable for QoE datasets as they are designed for typical AI/ML-based datasets, which are usually huge (millions of images/billions of text, 100 thousands of videos) and have attributes focussing on the model development process. QoE datasets, on the other hand, are typically much smaller and focus on the subjective and objective assessment of audiovisual content.

### C. Contributions

This paper presents a “*datasheet*” template to document various aspects of QoE (subjective and objective assessment) datasets. The proposed datasheet consists of various questions/aspects grouped into six different sections. Each individual field/question is supported with a detailed description. The datasheet can be filled by either the dataset creator or the end-user and then shared for easier understanding and reproducibility of their work.

The datasheet template is publicly available on GitHub [35] in various formats (*google sheets*, *.xlsx*, *.odt*, *.pdf*, and *.html*) and can be used to document the various aspects of both new and existing datasets. Along with the proposed datasheet template, for easier understanding, various example datasheets of existing open-source datasets have also been made available in the GitHub repository [35].

### D. Template Development Process

We elaborate in this section on the datasheet template’s creation process. The authors first created the draft datasheet template based on their extensive experience in the field of QoE assessment. More specifically, learnings while creating and documenting over ten open-source datasets, along with their experience in using similar third-party open-source datasets for various purposes, were used to design the draft template. The template was then used to create example datasheets for three open-source datasets, GamingVideoSET [15], AVT-VQDB-UHD-1 [14] and BC-KU Multi-Screen dataset [36]. Based on our experience filling in the example datasheet, we identified the missing and wrongly ordered fields, typos, and lack of clarity in titles and descriptions, which was incorporated into improving the draft datasheet template. After this, feedback was then collected from QoE researchers from Sony (Germany), TU Illmenau (Germany), and Kingston University (UK), which was then used to further improve the datasheet to obtain the current proposed version of the datasheet template.

## II. PROPOSED DATASHEET TEMPLATE

Figure 1 presents a summary of the proposed datasheet template. The datasheet considers various aspects of any traditional 2D audiovisual QoE datasets, from dataset overview to details about subjective and objective quality assessment. The proposed fields are optional and provide the flexibility to

- *Dataset Overview*: Provides generic information about the dataset here to allow the reader to quickly understand what this dataset is about and if it is relevant to their interests.
  - E.g., dataset name, license, contact information, license, etc.
- *Dataset Description*: Describes the various aspects of the datasets such as:
  - Source Videos: Framerate, Bit-depth, Resolution, etc.
  - Encoding Settings: Codecs, Encoder type, Artifacts considered, etc.
  - Processed Video Sequences: number of PVSs, container format, etc.
- *Subjective Quality Assessment*: Provides details about the subjective tests such as:
  - Subjective test setup: test environment, display size, resolution and viewing distance, etc.
  - Testing Methodology: test software, number of test subjects and test sequences, etc.
  - Test Participants: details about how the participants were recruited and their demographics.
  - Subjective Scores Analysis: outlier detection, transformation, etc.
- *Objective Quality Assessment*: Provides details about the model evaluation.
  - Quality Metrics: metrics considered and their type, pooling method used, etc.
  - Model Evaluation: performance measures considered, model complexity, etc.
- *Ethical Considerations*: Captures any relevant Ethical/GDPR concerns such as ethical review process, consent form, and intended usage of the dataset.
- *Supplementary Information*: Provides additional details such as dataset creators, funding, etc. along with additional information that was not covered earlier.

Figure 1: Summary of various sections of the proposed datasheet template.

add any additional information as the dataset creator desires. For easier understanding, the proposed datasheet is divided into six different sections, as discussed next.

### A. Dataset Overview

As the name suggests, this first section provides an overview of the dataset to the end user. It is intended to allow the readers to quickly understand what the dataset is about and if it is relevant to their interests. Details such as the name of the dataset, the date/year it was created, the dataset repository download link, license, required citation, and contact information are presented in this section.

### B. Dataset Description

The second section summarizes the various characteristics of the dataset’s source and encoded video representations and is further divided into three sub-sections. In the first part, “Source Videos”, information about the various aspects of the source videos (number and type, bit-depth, dynamic range, resolution(s), etc.) that are either provided or used in the dataset are captured. This is quite important as the reader might be interested in a dataset with a particular type of content (e.g., 10-bit HDR gaming content). In the second part, “Encoding Settings,” information about the encoding parameters, such as encoder type, rate control, codecs, resolution, bit-depth, etc., is collected. The last part, “Processed Video Sequences,” captures details about the encoded video sequences, such as the number of sequences used and the container format used for media playback.

### C. Subjective Quality Assessment

A detailed description of the test settings, methodology, and procedures that must be followed, including data processing guidelines, such as outlier detection, etc., as defined in various

ITU Recommendations [27–29] can help in asserting the reliability, repeatability, and validity of the reported subjective test results. Hence, this section captures the relevant information covering various aspects of subjective quality assessment: subjective test setup (test environment, display, viewing distance, rating scale, etc.), testing methodology (playback software, number of test subjects and sequences, etc.), information about test participants (demographics of test participants, etc.), and subjective data analysis (outlier analysis, score transformation, etc.). The information presented in this section can help the reader better understand the subjective test assessment results.

#### D. Objective Quality Assessment

Objective Quality Assessment includes methods and models that use objective measurements such as signal fidelity to predict the visual quality as perceived by human observers. Most QoE datasets include the performance evaluation of various image and video quality metrics. This section collects data that tries to capture the different aspects of the model performance evaluation, such as the quality metrics considered, the implementation used and its version, how the model was trained and tested, and various measures that were used to quantify the performance of evaluated models and metrics.

#### E. Ethical Considerations

QoE datasets often include the use of multimedia data, which can include personal data such as images/videos of persons or, in some cases, might include violent/disturbing scenes. For example, in the case of datasets containing gaming videos, there might be violent scenes that some viewers might find disturbing. Also, often QoE datasets include a subjective quality assessment that includes human test subjects. Hence, it is often of significant importance to the dataset users to understand the relevant ethical approval/considerations that were taken into account during the design of the dataset. Various aspects, such as the intended usage of the dataset, ethics approval, sample consent form used during the subjective tests, and other relevant ethical or GDPR concerns the reader must be aware of before using this dataset, are collected in this section.

#### F. Supplementary Information

This section includes additional questions that try to capture information that does not form an integral part of the rest of the sections. This includes information about the creators/authors, how the dataset creation was funded, and any confidential aspects of the dataset the reader needs to understand. Additionally, this section provides the opportunity to add any other relevant supplementary information by the dataset creator that was not captured by the various questions in the template.

*Note:* It should be noted that the proposed template includes much more features than what has been discussed above. Please refer to the actual datasheet template in GitHub[35] or Appendix at the end of this paper for a complete overview of the proposed datasheet.

#### G. Example Datasheets

In order to help the reader better understand the proposed template, we provide example templates for the following datasets:

- 1) GamingVideoSET (2018) [15]: This dataset consists of source videos and subjective and objective assessment results for gaming video quality assessment.
- 2) AVT-VQDB-UHD1 (2020) [14]: Dataset consisting of source videos, subjective and objective scores for videos encoded with three different codecs, which was in part used in the design of ITU-T Rec. P.1204 [11].
- 3) BC-KU Multi-Screen Dataset (2023) [17]: A very recent dataset consisting of subjective and objective assessment results considering a multiscreen setup of three different devices: mobile, tablet, and TV.

### III. DISCUSSION, CONCLUSION AND FUTURE WORK

We presented in this paper a first attempt at creating a datasheet template to enable better documentation of subjective and objective quality assessment datasets. It is not definitive or complete, and we anticipate continuously improving it over time, based on discussions and feedback from other experts. As of the writing of this paper, additional feedback is being sought from experienced QoE researchers from various multimedia streaming companies and organizations such as Video Quality Experts Group (VQEG)<sup>2</sup> and Qualinet<sup>3</sup>. The discussions and input will then be incorporated into developing an improved version which will be updated in the GitHub repository. We believe that this datasheet template can help both dataset creators, dataset users, and, where applicable, the reviewers of papers/works published based on the datasets.

While the requirement to fill in this datasheet does add overhead to the dataset creators, we believe that the benefits far outweigh the costs, as has also been the case in the field of AI/ML. Also, while the proposed template is more suitable to traditional 2D video/audiovisual datasets, it can easily be adapted to other datasets, such as Audio-only, Immersive Video (VR/AR, 360, Light Field, Point Cloud and 3D meshes) and Computer Vision. In the future, collaboratively with other QoE experts, we plan to create more personalized datasheets for such QoE datasets.

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## APPENDIX

For an easier understanding of the template, an example datasheet for an open-source dataset GamingVideoSET is provided here. The datasheet template and all example datasheets can be found in the GitHub repository [35].

Datasheet for QoE Datasets. This template is intended to be used by both dataset creators as well as anyone using an already published dataset.				
<i>Note: If there are multiple datasets that are being used/proposed in a single work, please fill in a separate sheet for each individual dataset</i>				
<b>Template Details</b> (not to be modified)	Date Created:	28-April-2023	Date this template was first made publicly available	
	Date Modified	NA	Date the template was modified, if applicable	
	Version	v 1.0	Current Version Number	
<b>Section I: Dataset Overview</b>		<b>Value</b>	<b>Additional Comments/Urls (as applicable)</b>	<b>Description of the field</b>
Provide generic information about your dataset here. It will allow the reader to quickly understand what this dataset is about and if it is relevant to their interests.	Dataset Name	GamingVideoSET		Name of the dataset
	Dataset Abbreviation	NA		Short form of the dataset name, if different from Dataset name
	Version	v1.0		Version (default: v1.0)
	Creation/Publication Date/Year	2018		Date the dataset was first published. If exact date not available, please add the year of creation
	Modification/Update Date (dd-mm-yyyy)	NA		Date the dataset was last updated (write NA if not applicable/updated since creation)
	Repository	<a href="https://kingston.box.com/v/GamingVideoSET">https://kingston.box.com/v/GamingVideoSET</a>		Link to the repository
	Citation (BibTex/PlainTex/Url)	N. Barman, S. Zadtootaghaj, S. Schmidt, M. G. Martini and S. Möller, "GamingVideoSET: A Dataset for Gaming Video Streaming Applications," 2018 16th Annual Workshop on Network and Systems Support for Games (NetGames), Amsterdam, Netherlands, 2018, pp. 1-6.		Please add the required citation(s) or point to an url providing the citation
	License	NA		MIT, Apache 2.0, BSD, etc.
	Open-Access?	Yes	Password protected	Is the dataset fully open or password protected?
	Contact Information	Nabajeet Barman (nabajeetbarman4@gmail.com)		Contact information of the authors/creators to send questions or comments about the dataset
Dataset Size	30 GB		(Approx) size of the full dataset (in GB)	
Additional Information?	NA		Add any additional information, if available	
<b>Section II: Dataset Description</b>		<b>Value</b>	<b>Additional Comments/Urls (as applicable)</b>	<b>Description of the field</b>
Source Videos Information about the various aspects about the source videos that are used in the study	Number of Source Sequences	24		Number of source sequences considered (audio, videos, etc.)
	Content Genre	Gaming		Nature of source sequences (gaming, natural, animation, computer generated, etc.)
	Source Sequence Available?	Yes		Are source sequences made available as part of the dataset?
	Source Data Repository(ies)	NA		Please write NA if the dataset includes source videos as a contribution.
	Bit-depth (s)	8		8-bit, 10-bit, 12-bit, 16-bit, etc.
	Dynamic Range	SDR		SDR/HDR (please add details where possible, e.g., transfer char, gamma, etc.)
	Frame rate(s)	30		Frame rate of the source videos, e.g., 24, 25, 30, 60, 120, 144, etc.
	Resolution(s)	1920x1080		Resolution of source videos
	Pristine/User Generated	Pristine	Captured losslessly	Are the source sequences pristine or user generated/already compressed?
	Video Format	Raw Video		Format of the source videos, e.g., RawVideo, ProRes, HEVC Encoded, etc.
	Video Container	YUV		MP4, MKV, WEBM, Y4M
	Audio Format (if applicable)	NA		Audio format, if available
	Video/Audio/Audiovisual	Video only		Type of source sequences (e.g., video only, audio only, audiovisual)
SI/TI Information	Yes		Is SI/TI [ITU-T Rec. 913] available in the dataset?	
Additional Information?	None		Add any additional information, if available	
Encoding Settings Information about the encoding settings used in the dataset (also referred to as Hypothetical Reference Circuit (HRC)) in some works).	Encoder Implementation	FFmpeg		e.g., FFmpeg, VTM, HM, etc.
	Encoder Type	Software		Software/Hardware/Both
	Type of Software implementation	Practical		Reference/Practical/Both
	Rate Control	CBR		VBV, CBR, ABR, etc.
	Encoding Speed/Mode	veryfast		e.g., FFmpeg: ultrafast, medium, slow, etc.
	Video Codec(s)	H.264	Profile Main 4.0	H.264, HEVC, VP9, AV1, VVC, AVS2, AVS3
	Resolution(s)	1080p, 720p, 480p		Encoding resolutions considered
	Framerate(s)	30		Encoding framerates considered
	Bit-depth	8		Encoded (video) sequences bitrates
	Artifacts Considered	compression and scaling		Encoding, Scaling, Network (Stalling, Quality Changes, Packet Loss, etc.). Please add details
Scenario considered	HAS Live Streaming		Type of streaming scenarios considered	
Additional Information?	NA		Add any additional information, if available	
Processed Video Sequences	Number of PVSs	576		How many PVSs are in total?
	Container Format	MP4		MP4, MKV, WEBM, Decoded Rawvideo (YUV), etc.
	Additional Information	None		Add any additional information, if available
<b>Section III: Subjective Quality Assessment</b>		<b>Value</b>	<b>Additional Comments/Urls (as applicable)</b>	<b>Description of the field</b>
Subjective Test Setup	Subjective Test Environment	Lab-based		Controlled (Lab), Public, Home-based, Crowdsourcing, Hybrid
	ITU Rec	BT.500-14		Please mention if the test followed any specific ITU Rec such as BT.500-14, P.910, P.913
	Subjective test methods and rating scales	ACR(1-5)		ACR(1-5), ACR(0-10), DSIS, CCR? If not standardized method, please describe in details.
	Rating Scale	Overall		Overall / Continuous (using a slider) / Both
	Display Type	Desktop Monitor		TV, Mobile, Tablet, Desktop Monitor
	Display Size	24"	ViewSonic display monitor	Size of the display(s) used
	Display Resolution	1920x1080		Link to the device model, if available
	Viewing Distance	3H		Viewing distance from the screen
	Viewing Angle	Yes	In paper	
	Subjective test schematic or photo	NA		Is there any schematic or photo showing the lab test set up? If yes, please mention where it is available?
	Light Intensity in Test Room	NA		Was device, room illuminance, gamma level, etc. measured? If yes, please add details
Additional Information	NA		Add any additional information about the test environment, if available	

<b>Test Methodology</b>	Video Playback Software	VLC		Video player used to play the videos (e.g., VLC, MPV, Matlab, FFplay, etc.)
	Test Software	Proprietary Software		Which software did you use to play the videos and record the subjective opinion scores? E.g., Matlab, MSU VQMT, TUIL AVRateNg, Subjectify.us, Proprietary, Paper-based. Please add reference, as applicable
	Training	Yes	using other gaming sequences	Was there any training session before the actual test?
	Playlist randomized	Yes		Was the playlist randomized for each session/participant? Please explain.
	Playback	Self-paced by participant		How was the stimuli playback performed? E.g., fixed duration video followed by grey screen for a fixed duration, self-paced by the test participant.
	Upscaling (if used)	Bicubic		Upscaling filter used (Bicubic, Lanczos-3, Lanczos-5, Super Resolution)
	Test type	Video only		Video only, Audio-visual, audio only
	Number of Test Subjects	24		Number of participants that took part in the subjective test
	Test subjects per session	1		How many test subjects took part in a single session?
	Number of Test Sequences	90		Number of test sequences considered in subjective test
Additional Information	NA		Add any additional information about testing methodology, if available	
<b>Test Participants</b>	Test subject recruitment	University students and staff		How were the test subjects recruited for the study? University students and staff, Crowdsourcing platforms, friends and family, etc.
	Pre-screening?	Both performed in lab		Was there any eye test or any other pre-screening test performed on the subjective test participants? If yes, please mention which ones (visual acuity test such as Sellen or color-blindness test using Ishira charts, 3D vision check using stereo butterfly test, etc.)
	Experts or Non Experts	Non-experts		Please mention if the test subjects are experts (people working in video streaming) or non-experts or mix of both?
	Gender Distribution	32% Male, 68% Female		What is the gender distribution of the test subjects?
	Age Distribution	(Median) 29		What is the age distribution of the test participants?
	Additional Demographic Information	Yes		Is additional demographic information data such as viewing device preferences, number of hours videos streaming, gaming experience, etc. (as applicable) available? If yes, please provide details
	Additional Information	NA		Add any additional information about test participants, if available
<b>Subjective Scores Analysis</b>	Post-Screening	Yes	IQR based, please see paper for details	Did you perform any outlier analysis? If yes, which methodology did you use? Eg., Correlation based, Z-score
	Subjective Scores Removal?	Yes		Were any subjective scores removed after outlier analysis?
	Subjective Score(s)	MOS		How are the subjective scores reported? MOS/DMOS only?
	Subjective Scores Transformation	Yes	Please see Ref-Pezulli	Did you perform any mapping or transformation on the raw subjective scores? If yes, which one (e.g., generalized linear models (GLMs) for estimation of the population average QoE [Ref-Pezulli]). Please add details?
	Individual subjective scores	Yes, as part of additional dataset	see Note 1 below	Are individual subjective scores available?
	Statistical Analysis?	No		Was there any statistical analysis performed such as calculation of CI, etc.
	Additional Information	NA		Add any additional information about subjective scores post-processing and analysis, if available
<b>Any other comments</b>		None		Add any additional information about the subjective test which is not covered above and might be relevant to the reader
<b>Section IV: Objective Quality Assessment</b>				
	<b>Value</b>	<b>Additional Comments/Urls (as applicable)</b>	<b>Description of the field</b>	
<b>Quality Metrics</b>	Quality Metrics Considered	PSNR, SSIM, VMAF		Which quality metrics are you evaluating in this work? e.g., PSNR, SSIM, VMAF, LPIPS,
	Metric Type	Traditional, Machine Learning		What are the type of metrics that you are using? ML/DL/Traditional, Mixed
	Pooling	VQMT tool	See Note 2	What type of pooling method (e.g., mean, minowski summation, harmonic mean, etc.) is used to obtain the final video quality score (if applicable).
	Implementation(s) and Version	Only metric scores were made available in the dataset.		Add the list of urls to the open-source implementation links for the metrics used, if available (ffmpeg.github, commercial, proprietary, etc.). Please also add the version of the metric and/or implementation that you have used in this work
	Additional Information?	NA		Add any additional information about the quality metrics that might be relevant to the user
<b>Model Evaluation</b>	Performance Measures Considered	PLCC and SROCC		Which measures are considered to evaluate the performance of the quality metrics (e.g., PLCC, SROCC, RMSE, Kendall, R2, etc.)
	Mapping performed	None		Is there any transformation/fitting (linear/3rd order polynomial/logistic regression) performed before the computation of the performance scores?
	Statistical Significance Test(s)	Yes	See Note 2	Was any statistical significance test performed to compare the performance of the metrics compared/evaluated?
	Model Training	NA		Was the model(s) trained/retrained? If yes, how?
	Model Complexity	NA		If available, please add how the model complexity was evaluated
	Additional Information?	NA		Add any additional information about model evaluation that might be relevant to the user
<b>Any other comments</b>		None		Please add any additional information about the objective evaluation which is not covered above and might be relevant to the reader
<b>Section V: Ethical Considerations</b>				
	<b>Value</b>	<b>Additional Comments/Urls (as applicable)</b>	<b>Description of the field</b>	
Please use this section to describe any Ethical/GDPR related information	Ethical review	Yes	TU Berlin	Were any ethical review processes conducted before the dataset creation?
	Intended Use	Non-Commercial Research Only		Please describe the intended use of this dataset?
	Consent Form (used for subjective tests)	NA		Link to the sample consent form that was provided to the test subjects before their participation, if available
	Ethical/GDPR concerns?	Some sequences might contain violent scenes	Please refer to the readme file in the dataset	Are there any ethical concerns? that might be relevant to the reader/user of this dataset
	Additional Comments?	NA		Is there any additional ethical considerations/information that would be relevant to the users of this dataset?
<b>Section VI: Supplementary Information</b>				
	<b>Value</b>	<b>Additional Comments/Urls (as applicable)</b>	<b>Description of the field</b>	
	Are preview/web version of source videos available?	No		Is there any preview/sample sequences available for someone to view/listen to understand the dataset? This is useful when the dataset is of huge size and the reader would like to make sure that it suits their requirements before downloading the same.

Answer the additional questions mentioned here, as applicable. If there is any other information that you would like to add, please add it at the end of these questions	Who created the dataset?	Academic Collaboration	Kingston University, London and Technical University, Berlin, Germany	Company, University, Collaboration
	Who funded the creation of the dataset?	EU and DFG	EU Horizon 2020 grant agreement No 643072 and DFG Project MO 1038/21-1.	Project, company funding, self-funded, no funding
	Is there anything in the dataset that is confidential or might restrict its usage?	Fair Usage Policy Applies	Please refer to the readme file in the dataset	For example, is the dataset meant only for research use and non-commercial usage
	Who performed the subjective tests?	Authors		Was the subjective test performed by the authors/creators of the dataset? Or was it outsourced to an external 3rd-party? Please provide details
Please use this space to add any additional information that you think might be helpful to the reader which was not covered in this datasheet questionnaire	Existing Works where the dataset is being used	Please see references [3-10]	Others can be found on google scholar	Please add references to existing work(s) where either you or someone else have used this dataset (this is applicable to existing datasets that might have been available for sometime)
	Note 1	More detailed analysis into VQA performance was performed in a subsequent publication. Please see Ref [1].		Additional Comments/Information
	Note 2	VQMT Tool available in [2] was used for metric computation		Additional Comments/Information
	Note 3			Additional Comments/Information
	Note 4			Additional Comments/Information
	Note 5			Additional Comments/Information
	Note 6			Additional Comments/Information
<b>References</b>				
[1]	<a href="#">Nabajeet Barman, Steven Schmidt, Saman Zadtootaghaj, Maria G. Martini, and Sebastian Möller. 2018. An Evaluation of Video Quality Assessment Metrics for Passive Gaming Video Streaming. In Proceedings of the 23rd Packet Video Workshop (PV '18). Association for Computing Machinery, New York, NY, USA, 7–12. <a href="https://doi.org/10.1145/3210424.3210434">https://doi.org/10.1145/3210424.3210434</a></a>			
[2]	<a href="#">VQMT - Video Quality Measurement Tool. <a href="https://github.com/rolinh/VQMT">https://github.com/rolinh/VQMT</a></a>			
[3]	N. Barman, E. Jammeh, S. A. Ghorashi and M. G. Martini, "No-Reference Video Quality Estimation Based on Machine Learning for Passive Gaming Video Streaming Applications," in IEEE Access, vol. 7, pp. 74511-74527, 2019, doi: 10.1109/ACCESS.2019.2920477.			
[4]	<a href="#">Ulke, M., Zadtootaghaj, S., Schmidt, S. et al. NDNetGaming - development of a no-reference deep CNN for gaming video quality prediction. <i>Multimed Tools Appl</i> 81, 3181–3203 (2022). <a href="https://doi.org/10.1007/s11042-020-09144-6">https://doi.org/10.1007/s11042-020-09144-6</a></a>			
[5]	S. Zadtootaghaj, N. Barman, S. Schmidt, M. G. Martini and S. Möller, "NR-GVQM: A No Reference Gaming Video Quality Metric," 2018 IEEE International Symposium on Multimedia (ISM), Taichung, Taiwan, 2018, pp. 131-134, doi: 10.1109/ISM.2018.00031.			
[6]	S. Göring, R. R. R. Rao and A. Raake, "nofu — A Lightweight No-Reference Pixel Based Video Quality Model for Gaming Content," 2019 Eleventh International Conference on Quality of Multimedia Experience (QoMEX), Berlin, Germany, 2019, pp. 1-6, doi: 10.1109/QoMEX.2019.8743262.			
[7]	R. R. R. Rao et al., "A Large-scale Evaluation of the bitstream-based video-quality model ITU-T P.1204.3 on Gaming Content," 2020 IEEE 22nd International Workshop on Multimedia Signal Processing (MMSP), Tampere, Finland, 2020, pp. 1-6, doi: 10.1109/MMSP48831.2020.9287055.			
[8]	J. Le Tanou and N. Francisco, ENCODING OPTIMIZATIONS FOR VIDEO GAME LIVE STREAMING, IBC 2022, Amsterdam,			
[9]	<a href="#">Sam Van Damme, Objective quality assessment for video streaming of games. <a href="https://libstore.ugent.be/fulltxt/RUG01/002/785/859/RUG01-002785859_2019_0001_AC.pdf">https://libstore.ugent.be/fulltxt/RUG01/002/785/859/RUG01-002785859_2019_0001_AC.pdf</a></a>			
[10]	<a href="#">Nasim Jamshidi Avanaki, Steven Schmidt, Thilo Michael, Saman Zadtootaghaj, and Sebastian Möller. 2022. Deep-BVQM: A Deep-learning Bitstream-based Video Quality Model. In Proceedings of the 30th ACM International Conference on Multimedia (MM '22). Association for Computing Machinery, New York, NY, USA, 915–923. <a href="https://doi.org/10.1145/3503161.3548374">https://doi.org/10.1145/3503161.3548374</a></a>			
<b>Bibliography</b> (provides references which are used in the template description)				
Ref-ITUP913	ITU-T Rec. Methods for the subjective assessment of video quality, audio quality and audiovisual quality of Internet video and distribution quality television in any environment. <a href="https://www.itu.int/rec/T-REC-P913-202106-I">https://www.itu.int/rec/T-REC-P913-202106-I</a> , June 2021			
Ref-LPIPS	Zhang, R., Isola, P., Efros, A. A., Shechtman, E., and Wang, O., "LEARNED PERCEPTUAL IMAGE PATCH SIMILARITY (LPIPS)." <a href="https://torchmetrics.readthedocs.io/en/stable/image/learned_perceptual_image_patch_similarity.html">https://torchmetrics.readthedocs.io/en/stable/image/learned_perceptual_image_patch_similarity.html</a> (2023)			
Ref-Pezulli	S. Pezzulli, M. G. Martini and N. Barman, "Estimation of Quality Scores From Subjective Tests-Beyond Subjects' MOS," in IEEE Transactions on Multimedia, vol. 23, pp. 2505-2519, 2021, doi: 10.1109/TMM.2020.3013349.			
Ref-SSIM	Wang, Z., Bovik, A. C., Sheikh, H. R., and Simoncelli, E. P., "Image Quality Assessment: From Error Visibility to Structural Similarity," IEEE Transactions on Image Processing 13(4), 600–612 (2004)			
Ref-VMAF	Netflix, "VMAF - Video Multi-Method Assessment Fusion," <a href="https://github.com/Netflix/vmaf">https://github.com/Netflix/vmaf</a>			
Where not explicitly mentioned, this proposed template uses terminologies as defined in ITU-T P.10/G.100 and in other related ITU-T Rec (P.910, P.913, P.1401) and ITU-R BT.500				
End of the Datasheet				