



codecwar.com

Video codecs validation and comparison platform

Codecwar made by VicueSoft
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Create. Compare. Share.

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- Run encoding pipelines and compute operational points
- Build reports over computed data
- Control executions and organize your own work on handle workspace
- Manage groups for collaborative work
- Additional: Stream gallery, BD-Rate calculator, Tutorials

01

Summary

Overview

- ➔ Cover all the necessities for codec development and performance validation
- ➔ Run encoding pipelines and compute operational points
- ➔ Build reports on computed data
- ➔ Control executions and organize your own work in handy workspace
- ➔ Manage groups for collaborative work

Advantages

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Audience



Target audience

- Codec HW IP & SoC design
- Codec SW developers
- Video Codec Validation & QA engineers
- Academic Researchers



Industries

- Semiconductor
- Broadcasting
- Streaming service
- Software codecs development
- Universities

02

Key features

Key functionalities

- ➔ Run encoding pipelines and compute operational points
- ➔ Build reports on computed data
- ➔ Control executions and organize your own work in handy workspace
- ➔ Manage groups for collaborative work
- ➔ Additional: Stream gallery, BD-Rate calculator, Tutorials.



Run encoding pipelines and compute operational points

codecwar.com/create

5 steps

to make your own research

It is needed to create data for the analysis:

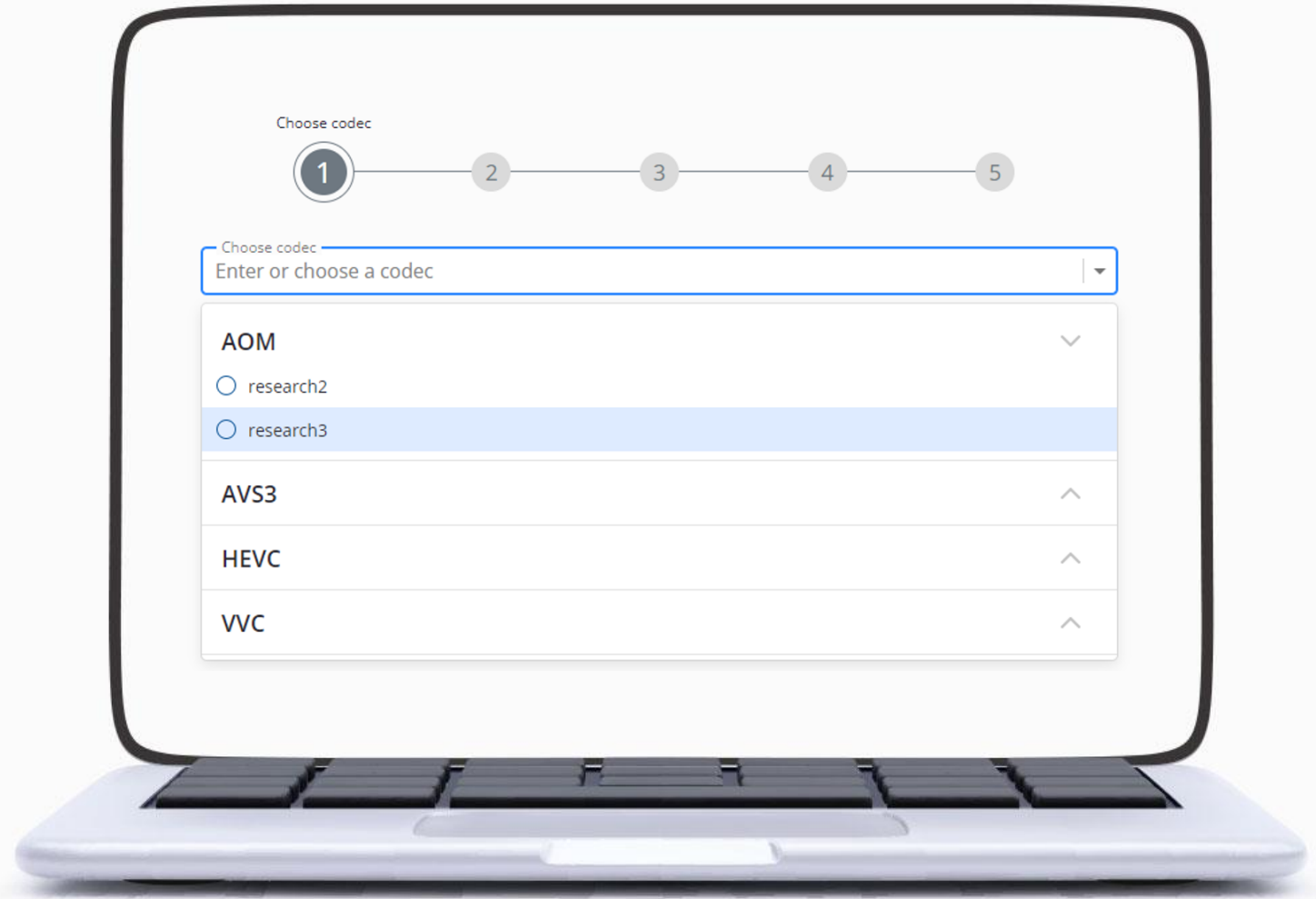
- 1 Prepare codec binary
- 2 Set fixed configuration and options to traverse for RD-curve points
- 3 Select stream set
- 4 Select metrics to evaluate
- 5 Set some auxiliary parameters and run it!

Step 1

Prepare codec

Choose pre-build codecs like AOM, JVET references or build custom from sources providing hash commit.

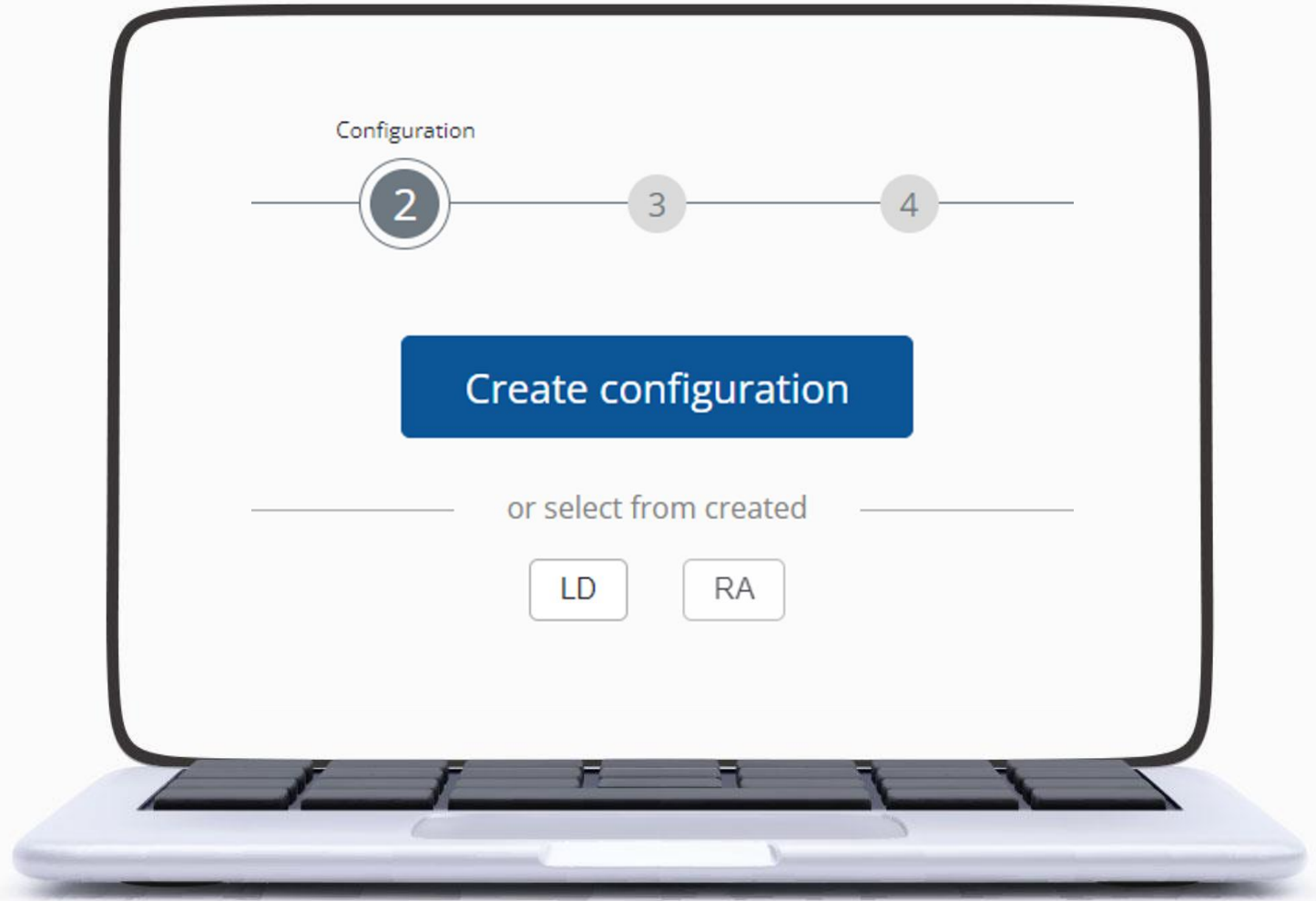
Or You can just upload your own binaries.



Step 2

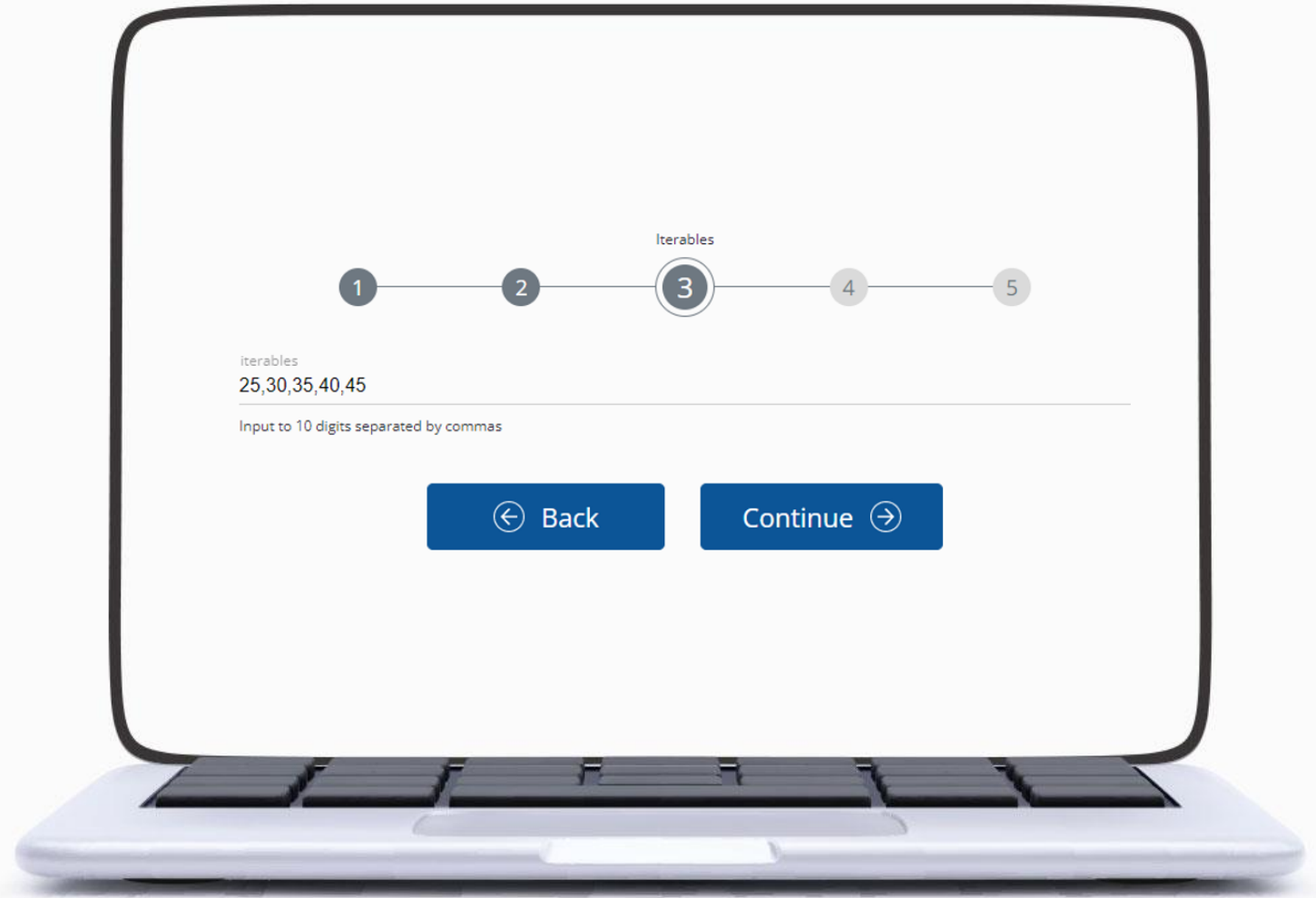
Set fixed configuration

- Choose public configuration for known codecs.
- Modify it for your purposes
- Create one from scratch.



Step 3

Set options to traverse
for RD-curve points



Step 3

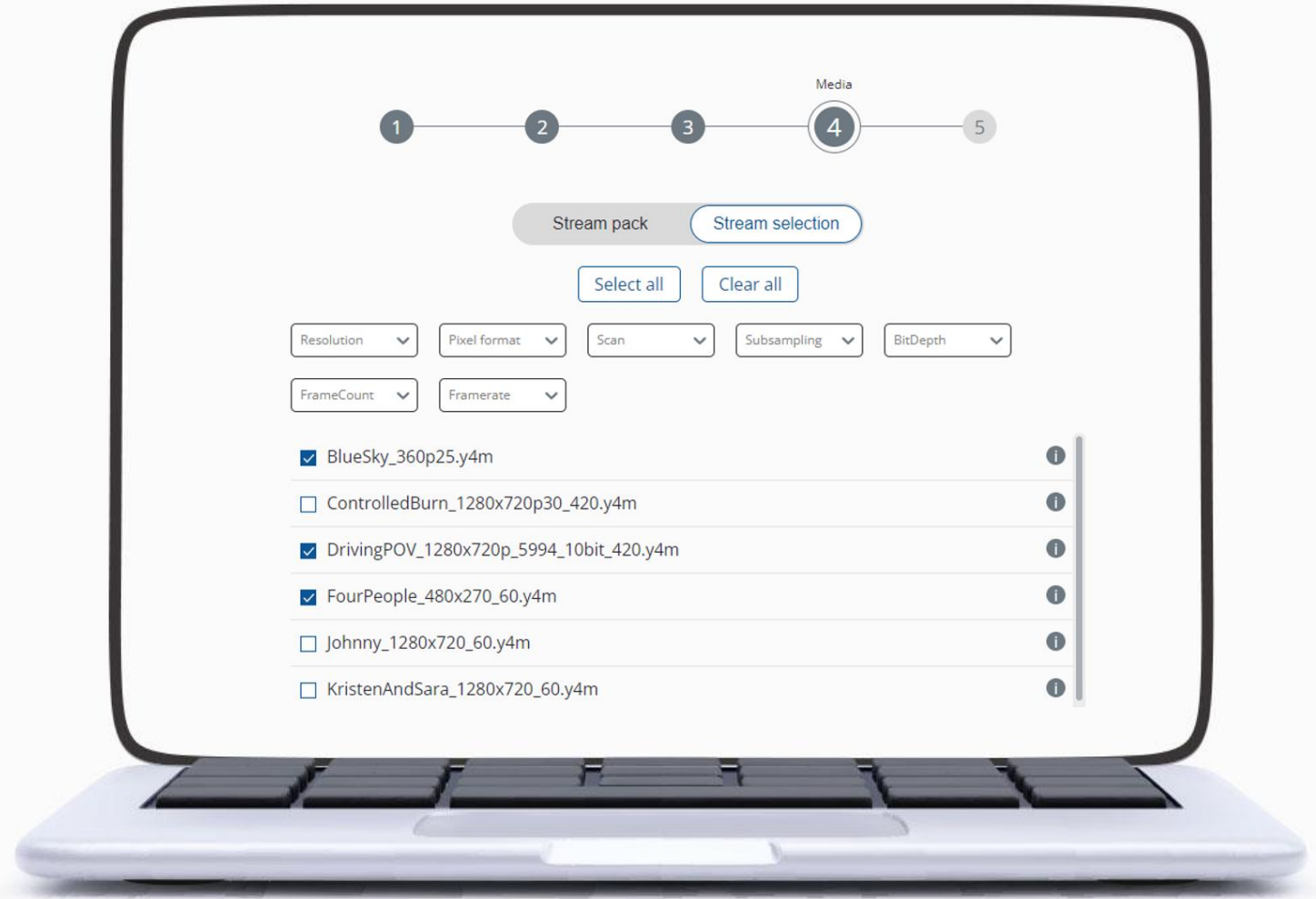
Set options to traverse
for RD-curve points



Step 4

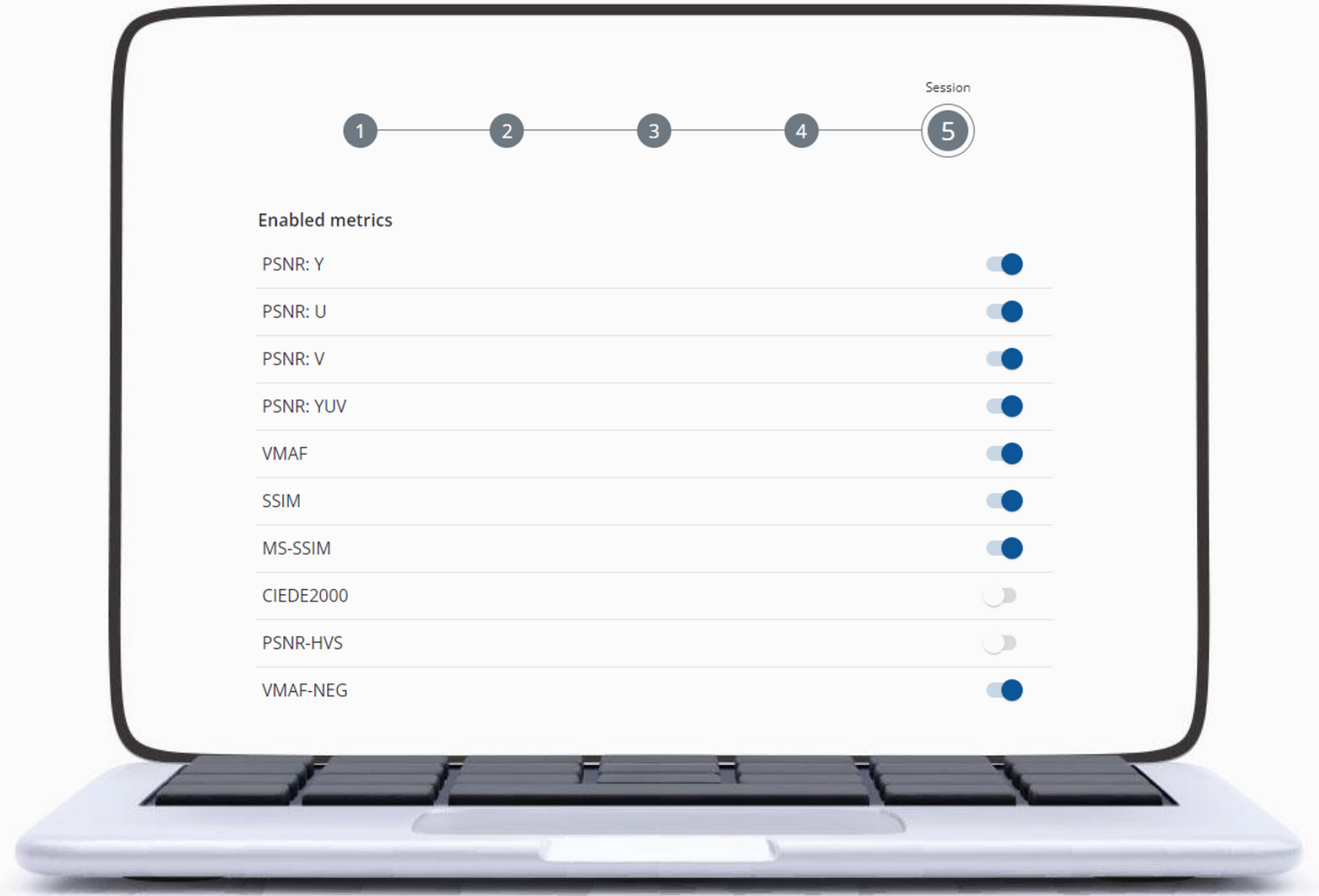
Select stream set

- Choose public set of streams (stream pack)
- Choose public streams from gallery
- Upload you own test streams



Step 5

Select metrics to evaluate



Set some auxiliary parameters

→ Keep encoded streams to be downloaded in future

→ Test your codec for memory leaks

→ Set hardware requirements

Run it!



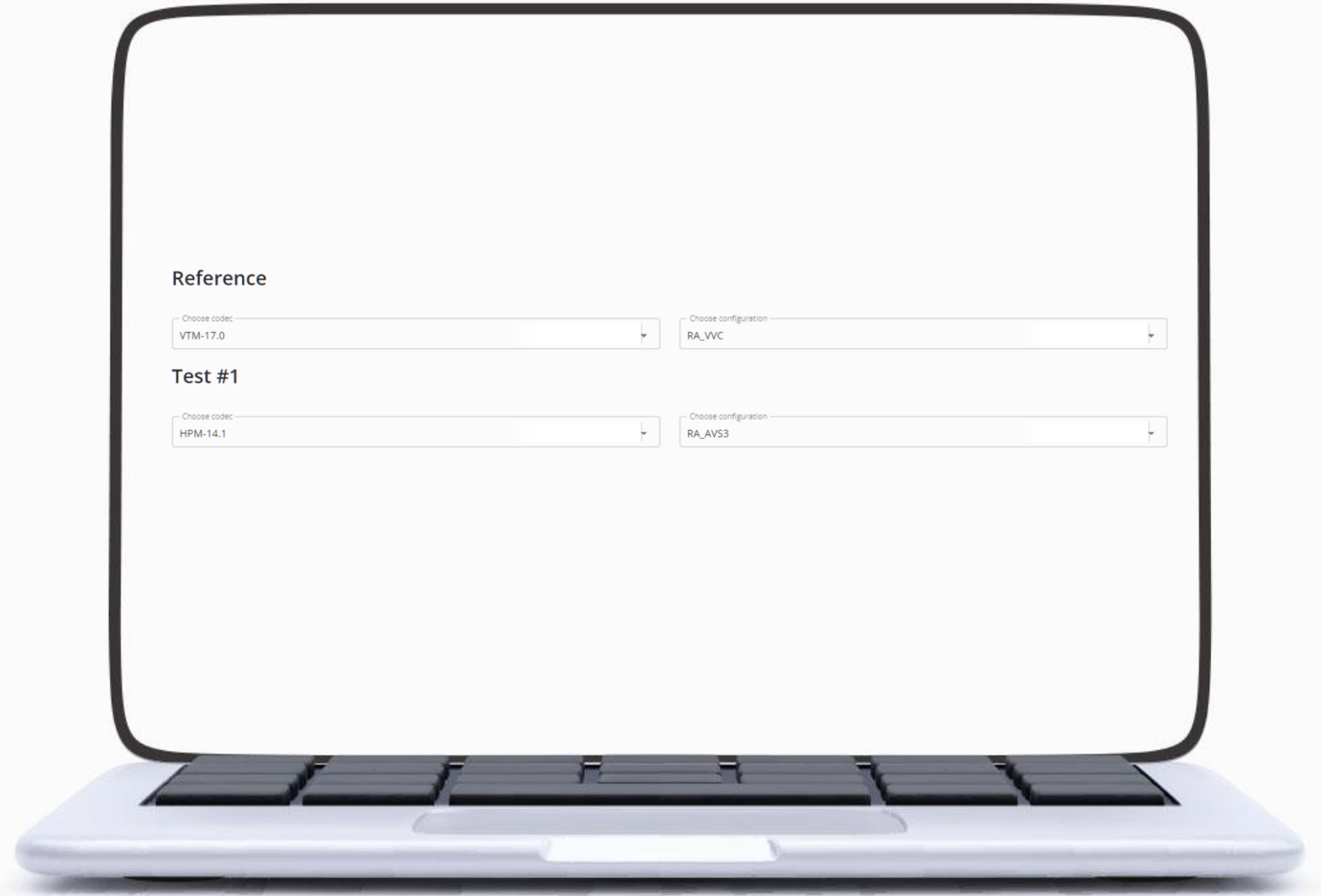
Building reports on computed data

codecwar.com/compare

Choose

codecs implementations
and test configurations

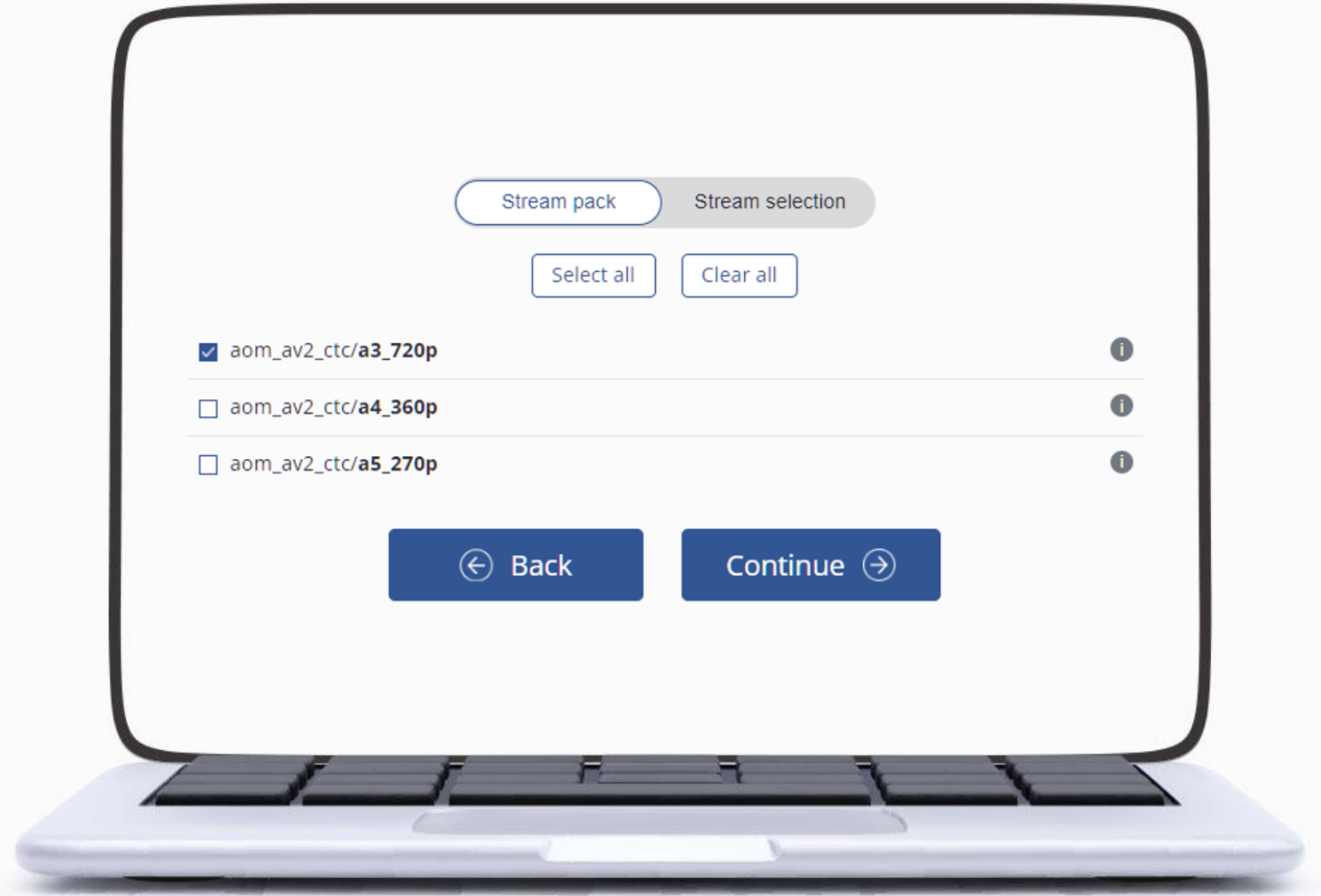
E.g. VVC VTM-17.0 vs AVS3 HPM-
14.1 on RA-configs from
aforementioned codecs CTC configs



Choose

streams to build reports on

E.g. on AOM AVM CTC A4 class
(or select specific streams)



Final report

Click «**Continue**» button,
you are done!



Reading report

Top of the page

Codecs Comparative Report

RD-Curves comparison and BD-Rates

The screenshot shows the 'Codecs Comparative Report' interface. At the top, there's a title 'Codecs Comparative Report' and a subtitle 'RD-Curves comparison and BD-Rates'. Below this, there are two main sections: 'Reference' and 'Test #1'. The 'Reference' section shows 'VVC / VTM-17.0 / RA_VVC'. The 'Test #1' section shows 'AVS3 / HPM-14.1 / RA_AVS3' with a red box indicating a 10.41% increase. To the left of these sections is a list of streams: 'BlueSky_360p25.y4m', 'RedKayak_360_2997.y4m', 'SnowMountain_640x360_2997.y4m', 'SpeedBag_640x360_2997.y4m', 'Stockholm_640x360_5994.y4m', and 'TouchdownPass_640x360_2997.y4m'. Each stream has an information icon. Between the streams and the test section is an 'Interpolation method' dropdown set to 'AOM PCHIP'. Annotations with arrows point to various elements: 'Additional info about configuration' points to a gear icon in the reference section; 'Set test as reference' points to a double arrow icon in the test section; 'Set of streams' points to the stream list; 'Average BD-Rate for set of streams — red means worse' points to the 10.41% red box; 'Change interpolation method for RD-curves plots' points to the interpolation method dropdown; and 'Additional info about stream' points to an information icon for a stream.

Additional info about configuration

Set test as reference

Reference
VVC / VTM-17.0 / RA_VVC

Test #1
AVS3 / HPM-14.1 / RA_AVS3 10.41% ↑

Streams:

- BlueSky_360p25.y4m
- RedKayak_360_2997.y4m
- SnowMountain_640x360_2997.y4m
- SpeedBag_640x360_2997.y4m
- Stockholm_640x360_5994.y4m
- TouchdownPass_640x360_2997.y4m

Interpolation method
AOM PCHIP

Set of streams

Average BD-Rate for set of streams — red means worse

Change interpolation method for RD-curves plots

Additional info about stream

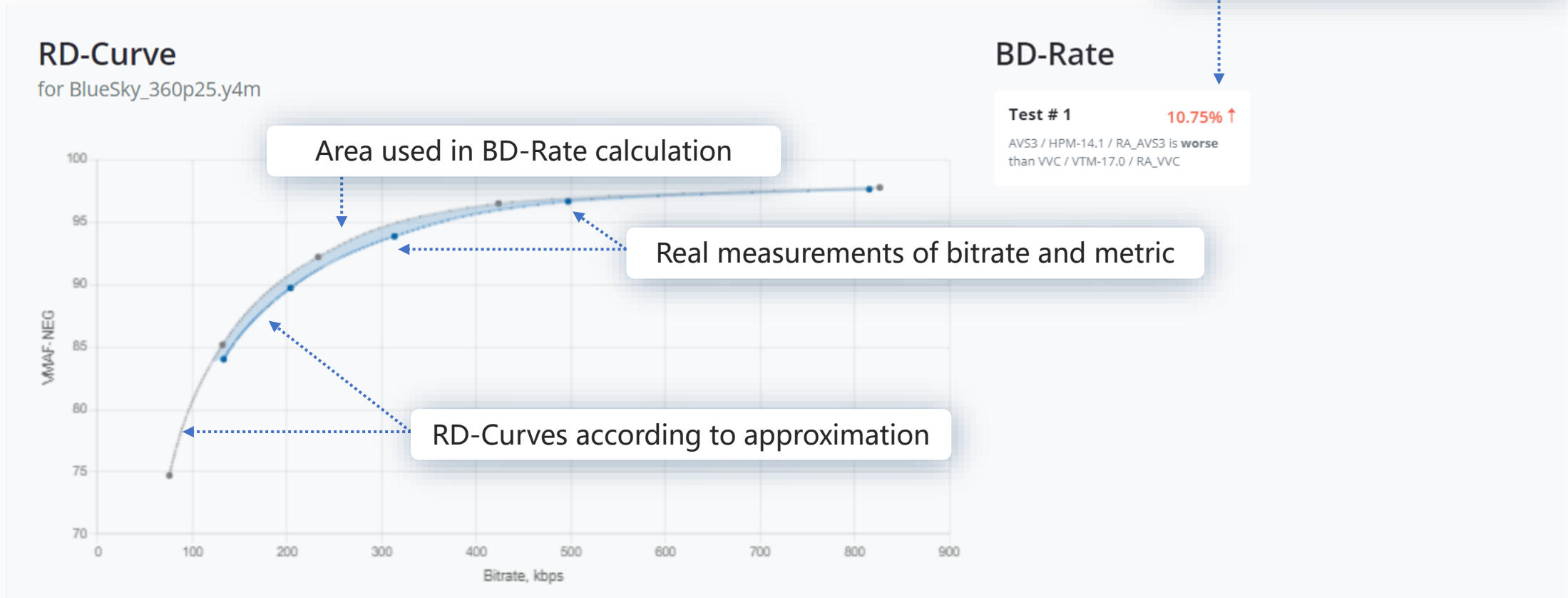
Reading report

Summary



Reading report

Details





**Control executions and
organize your own work
in handy workspace**

codecwar.com/workspace

Control execution of active session

- ➔ Get current status with progress bar
- ➔ Get chosen configurations
- ➔ Get machine characteristics
- ➔ Get stdout and specific command lines



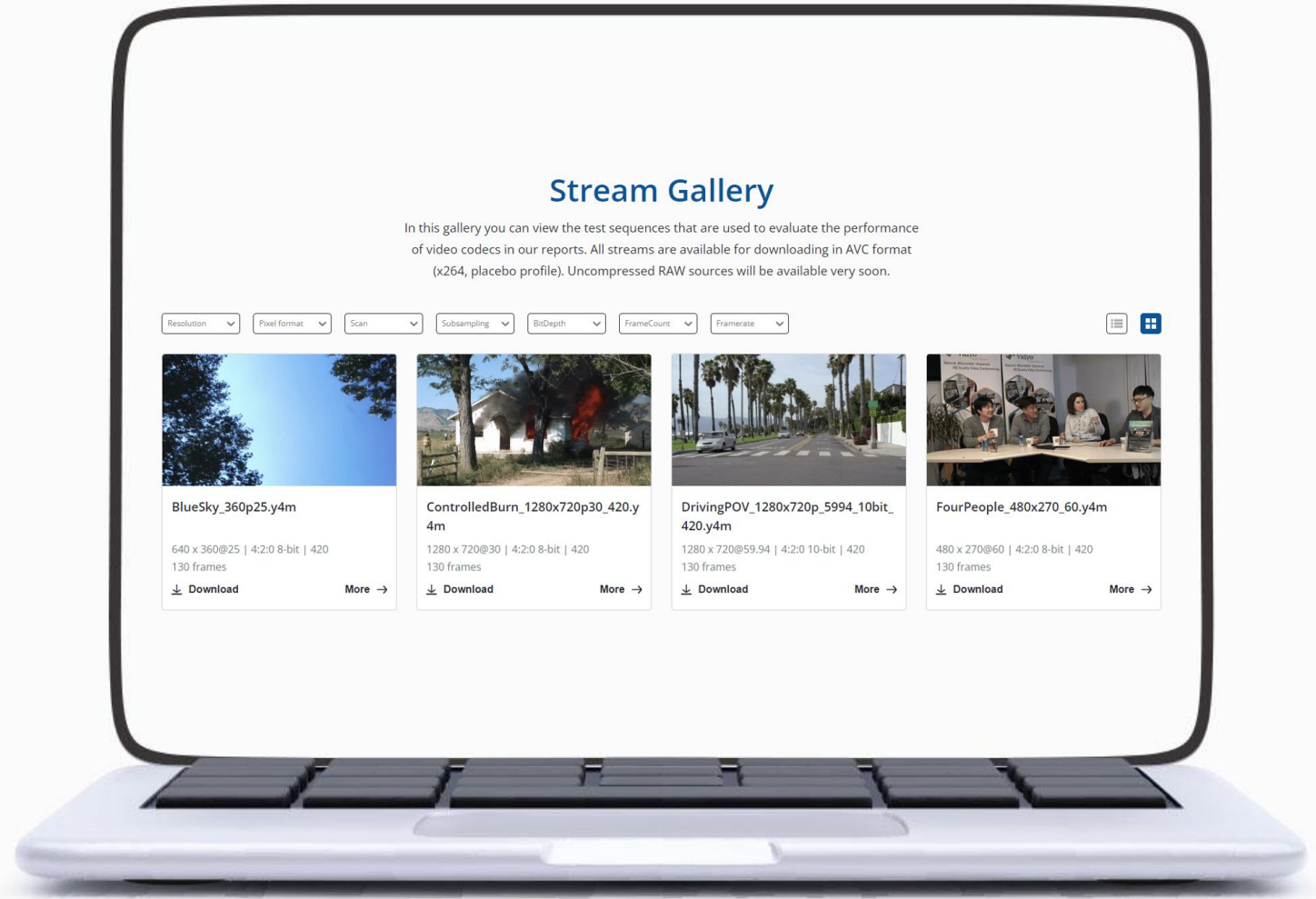
Manage groups for collaborative work

Manage groups

- ➔ Manage users and sessions' accesses and visibilities
- ➔ Organize collaborative work in your team

Stream gallery

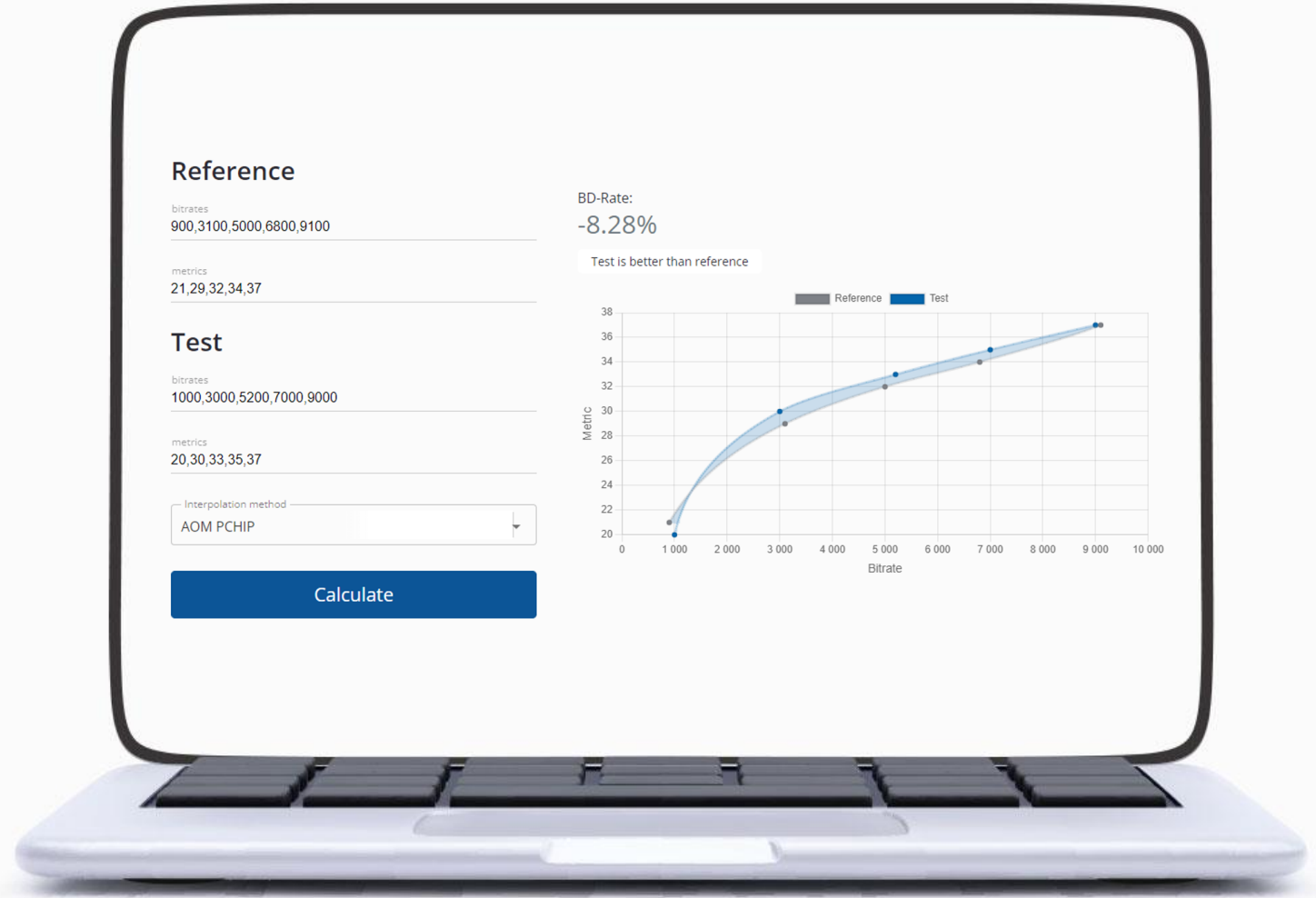
Get information about the streams available for test and download them



BD-Rate calculator

BD-Rate calculator for manual
quick checks

Run it!





Solutions
for video professionals

Thank you!