Instituto_Nacional de Saúde
Doutor Ricardo Jorge

Hypothesis-Free Detection

Virus Detection

From Reads to viral detection

TELEVIR | Basics

Bioinformatics Diagnostics

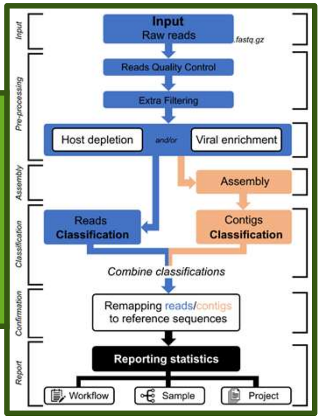
TELEVIR | Virus Detection

Project Planning

Check Settings

Create Project

Deploy



Prepare analysis

Setup Experiment

Manage Workflows

TELEVIR | Virus Detection

Settings | Setup

|Modular Deployment

Software can be turned **ON/OFF**
Pipeline Steps can be turned **ON/OFF**
- Some combinations are not allowed, e.g.
Contig classification ON & Assembly OFF

- *At least one classifier must be ON*

|Benchmarked Default Settings

Settings are modifiable

TELEVIR | Virus Detection

Settings | Classification Software

Software	Algorithm	Substrate	Database
Kaiju	Mod. BWT	Protein	NCBI viral Refseq protein
Diamond	Diamond Framework	Protein	NCBI viral Refseq protein
KrakenUniq	Probabilistic	DNA	NCBI viral Refseq
Centrifuge	Mod. BWT	DNA	NCBI viral Refseq

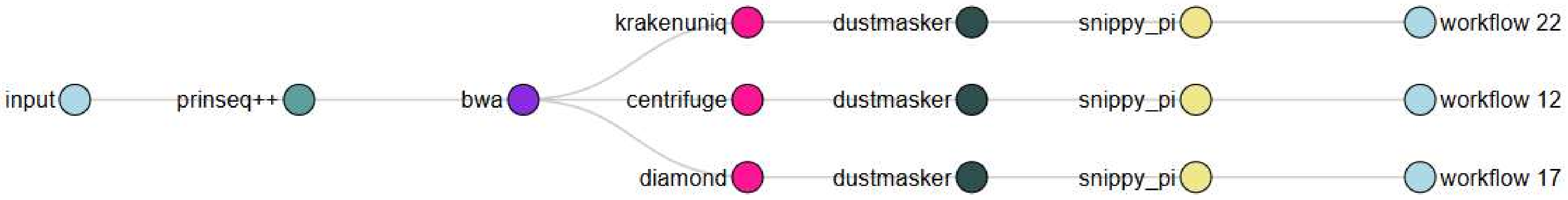
TELEVIR | Virus Detection

Settings | Classification Software

Software	Algorithm	Substrate	Database
Kraken2	Hash	DNA	NCBI viral Refseq +
FastviromeExplorer	EM	DNA	NCBI viral Refseq; Virosaurus
BWA	BWA	DNA	NCBI viral Refseq

TELEVIR | Virus Detection

Settings | Cross Validation



|Modular Deployment

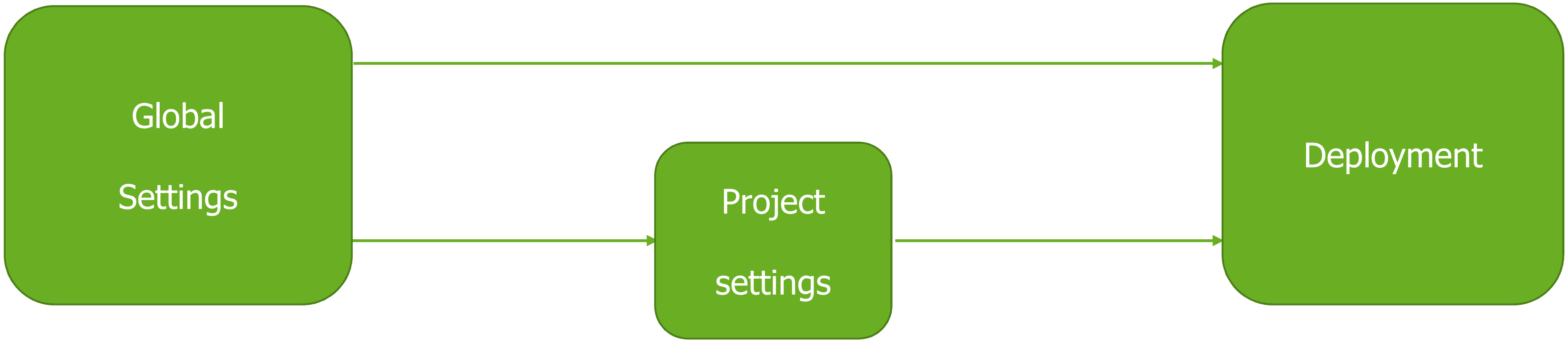
All possible combinations are deployed

Ensemble Ranking

TELEVIR | Virus Detection

Settings | Project Setup

Global Settings get replicated at Project level



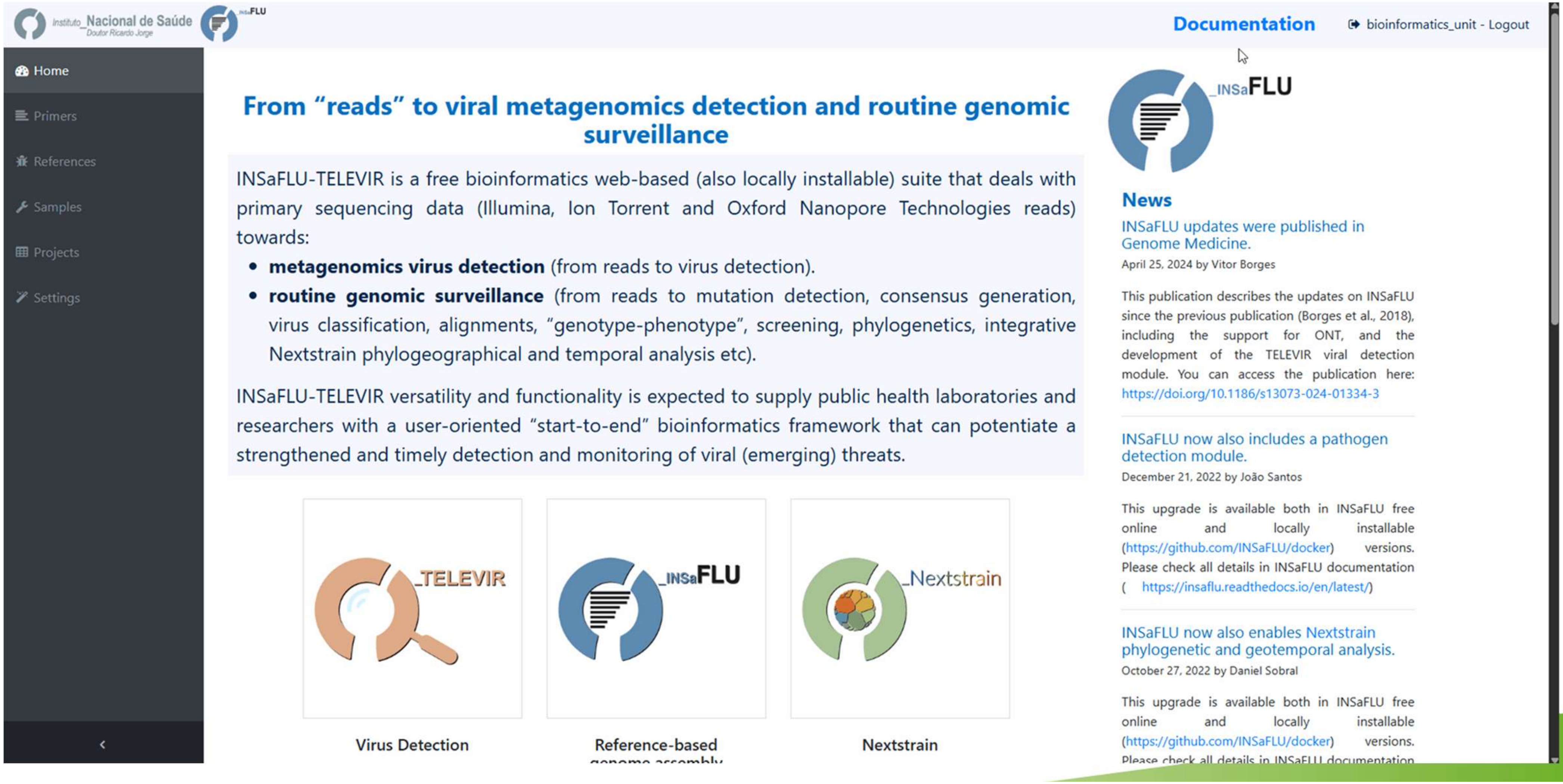
Global Settings

Project settings

Deployment

TELEVIR | Global Settings

Video tutorial



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Virus Detection

Reference-based genome assembly

Nextstrain

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TELEVIR | Global Settings

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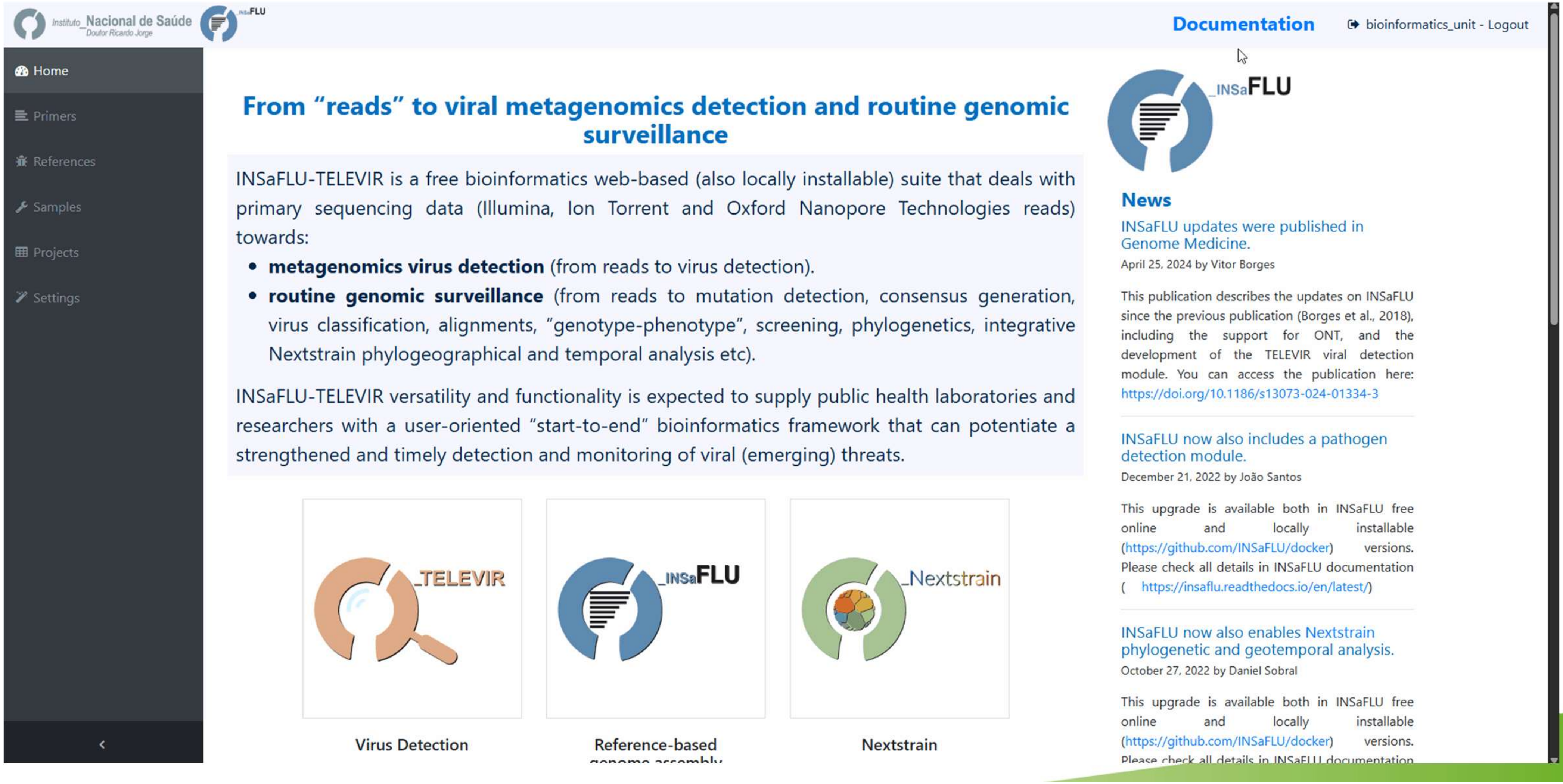

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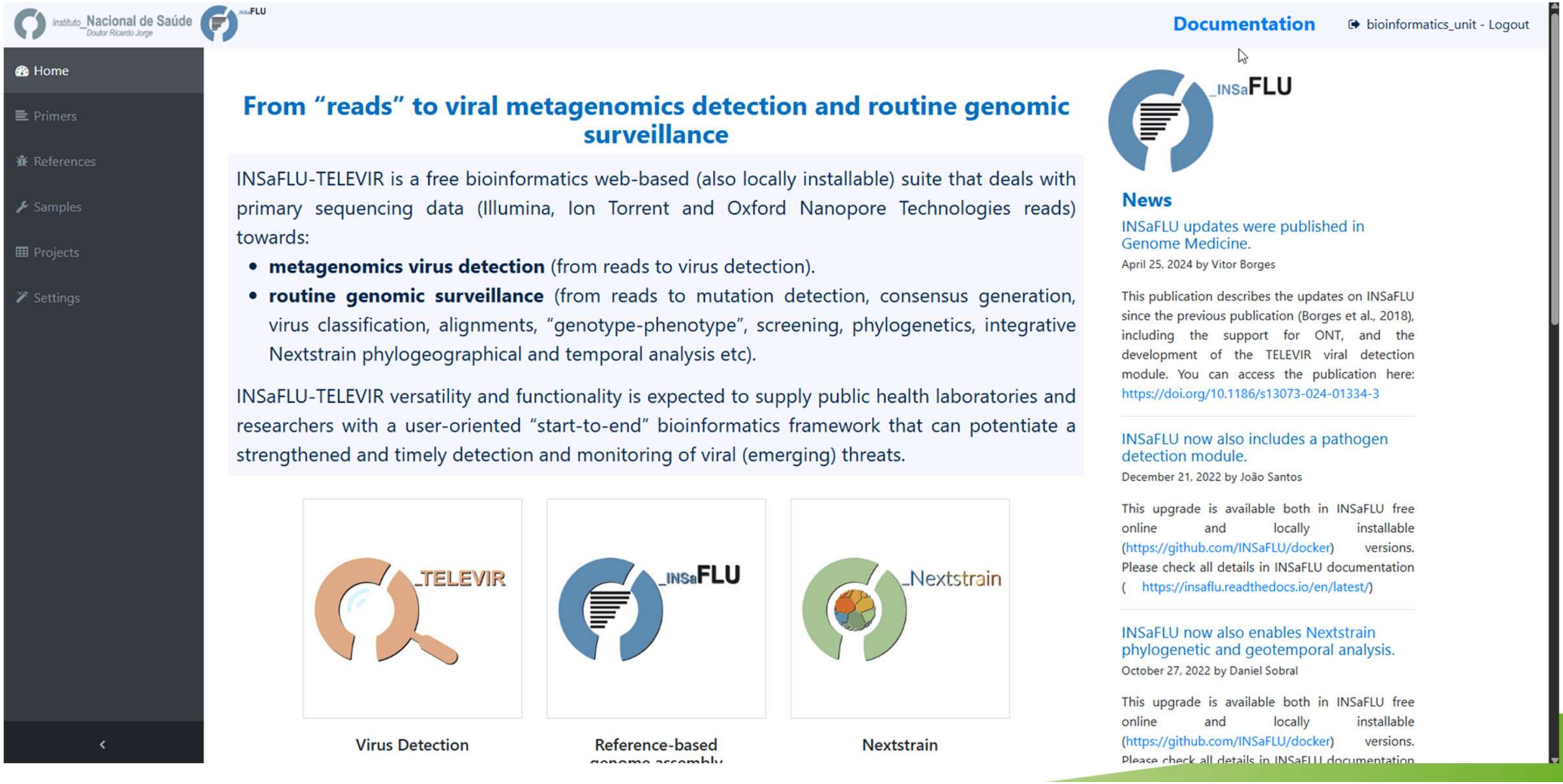

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Settings | Project Setup

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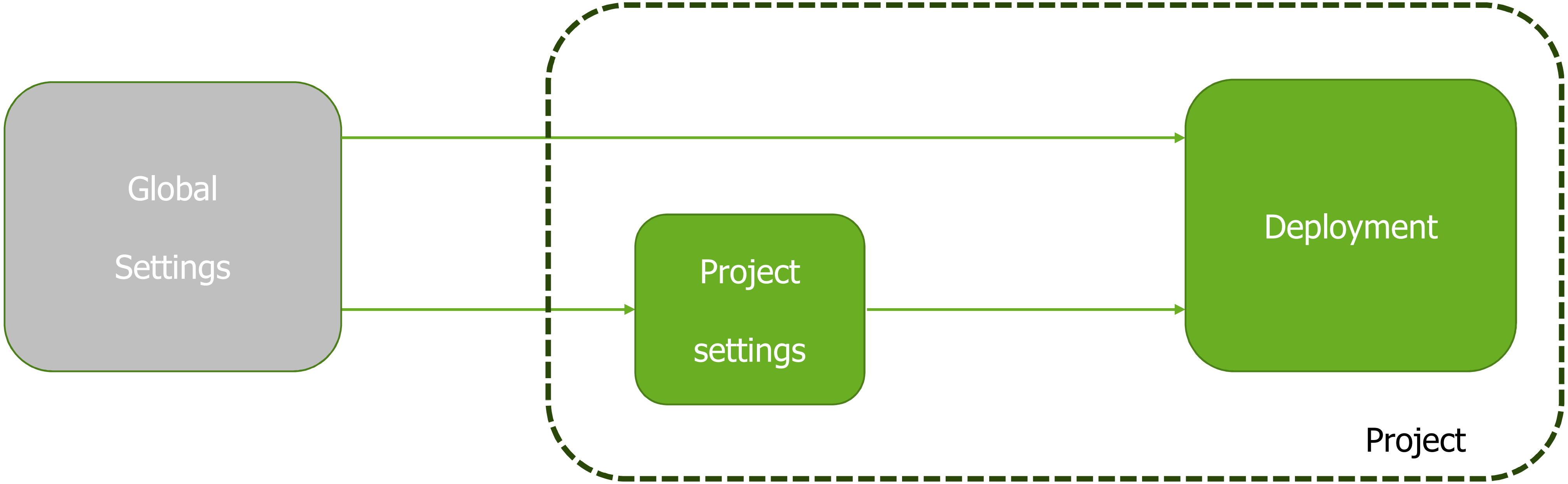


TELEVIR | Virus Detection

Projects | Workflow Management

| Workflow Management

Deploy workflows – single OR multiple
Stop Workflows – single OR multiple

⚠ **Project Specific Settings**

| Set Controls

Flag in reports

| Access Workflow Reports

Individual Workflows, **Sample** Workflow-Comparison
Across Samples

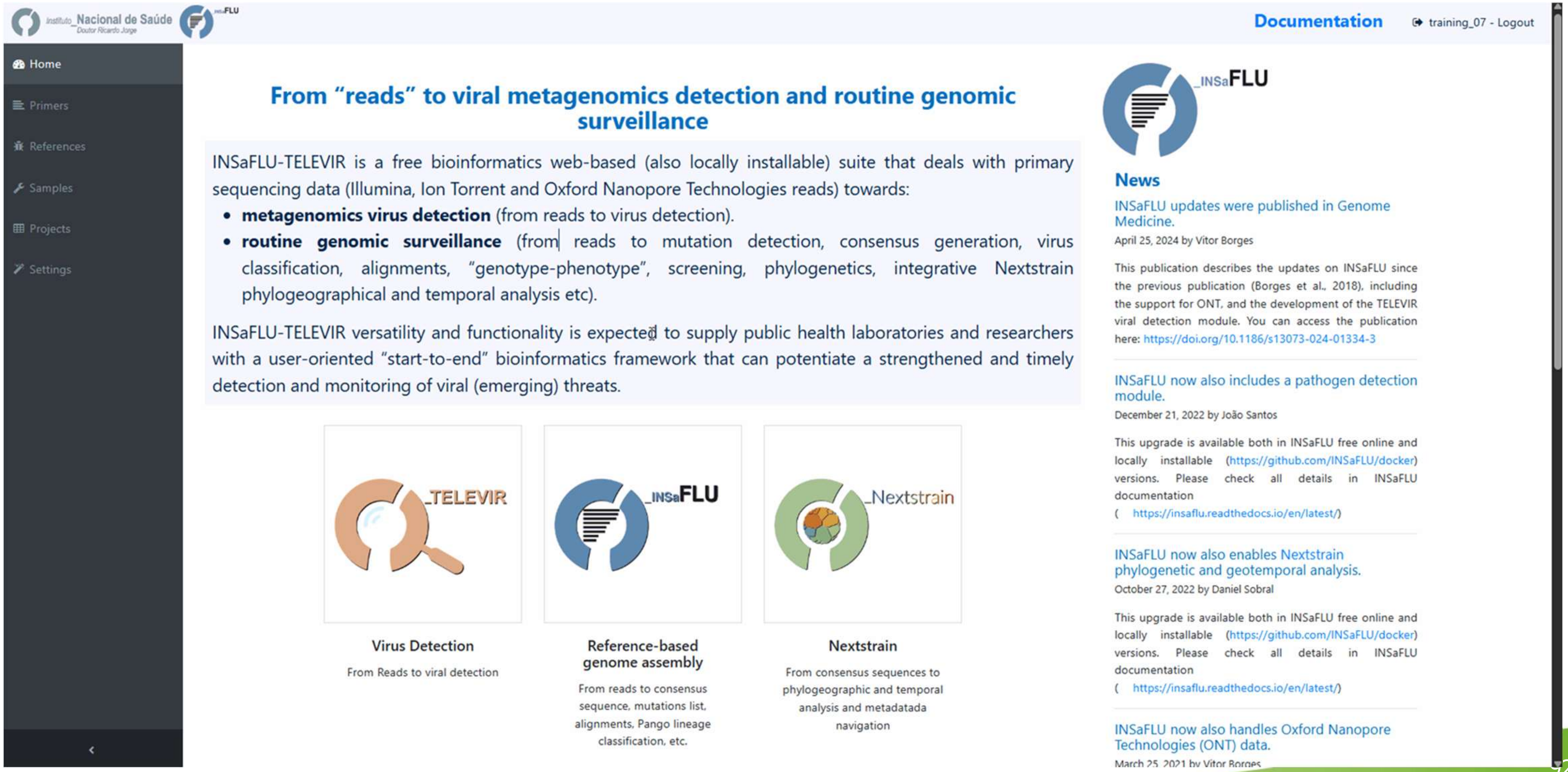
TELEVIR | Virus Detection

Projects | Creation

1. **Create Project**
2. **Change settings (i.e., select workflows)**
3. **Add Samples** to the project.
4. **Deploy Workflows**

TELEVIR | Project Setup

Video tutorial



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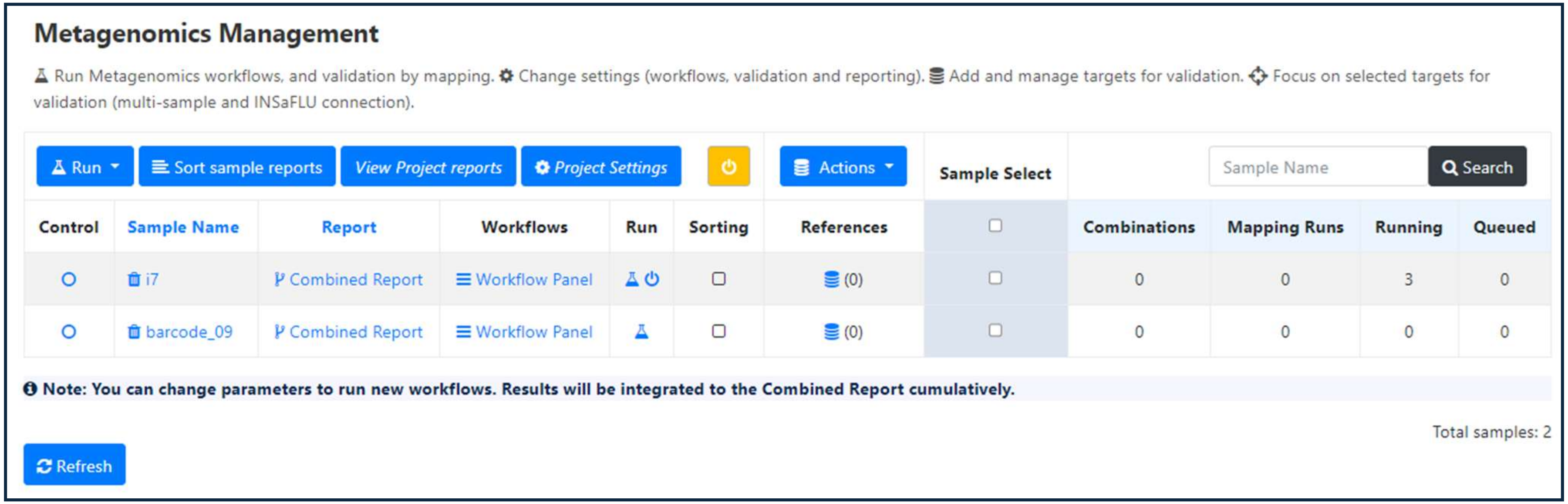
Projects | Workflow Management



Metagenomics Management

Run Metagenomics workflows, and validation by mapping. Change settings (workflows, validation and reporting). Add and manage targets for validation. Focus on selected targets for validation (multi-sample and INSaFLU connection).

Control	Sample Name	Report	Workflows	Run	Sorting	References	☐	Combinations	Mapping Runs	Running	Queued
○	i7	Combined Report	Workflow Panel		☐	(0)	☐	0	0	3	0
○	barcode_09	Combined Report	Workflow Panel		☐	(0)	☐	0	0	0	0

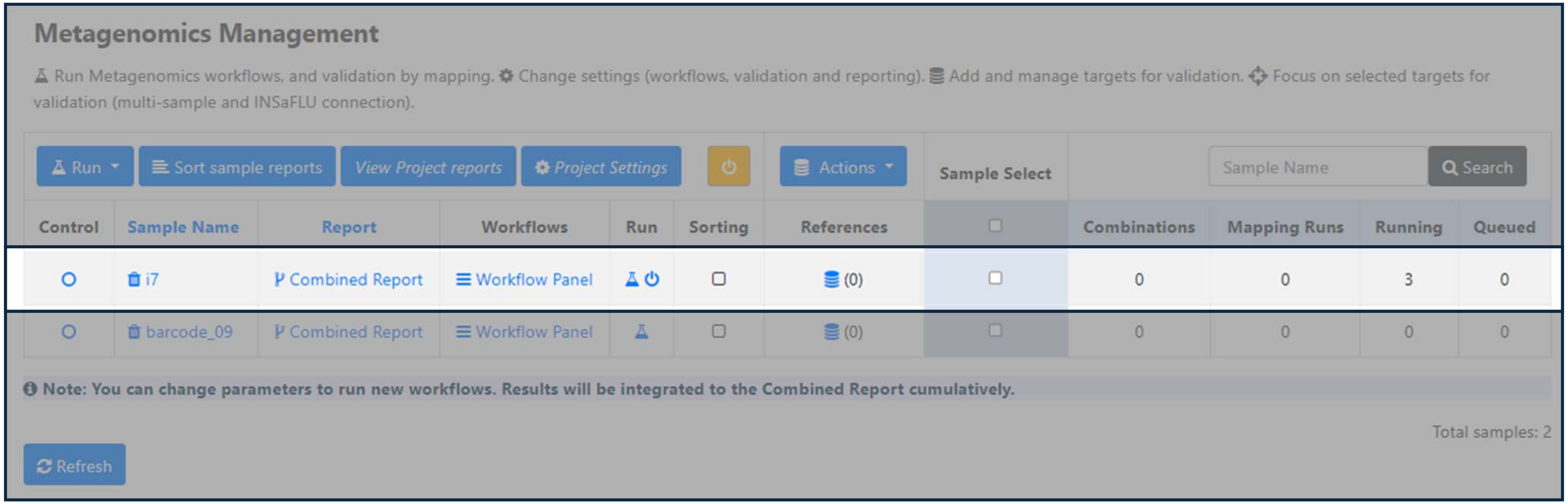
Note: You can change parameters to run new workflows. Results will be integrated to the Combined Report cumulatively.

Total samples: 2

TELEVIR | Virus Detection

Projects | Workflow Management

Sample Table



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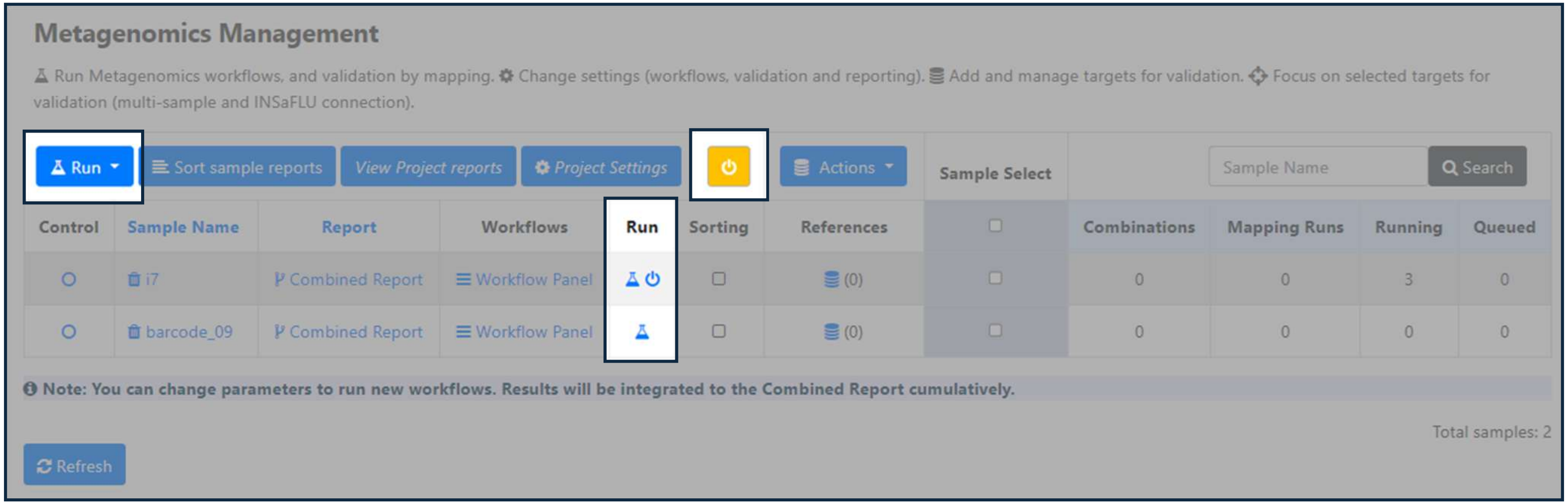
TELEVIR | Virus Detection

Projects | Workflow Management

Deployment



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⚗ Run ▾ - Classical workflows” (for all samples)

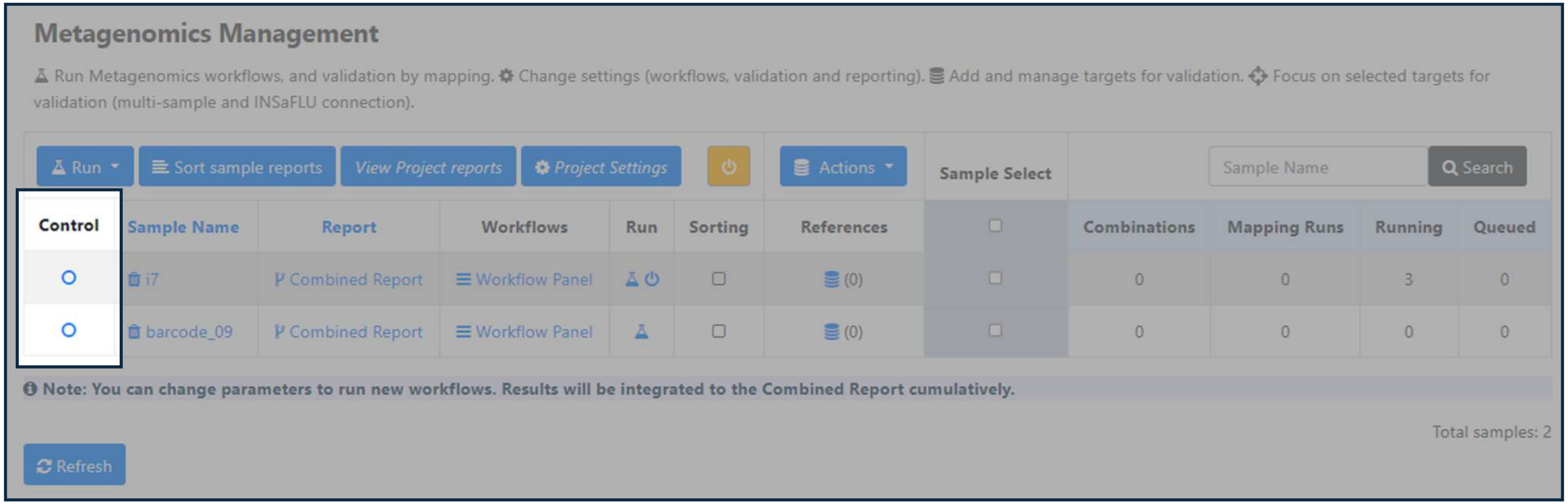
the individual ⚗ (user-selected samples)

⏻ Stop Workflows

TELEVIR | Virus Detection

Projects | Workflow Management

Controls



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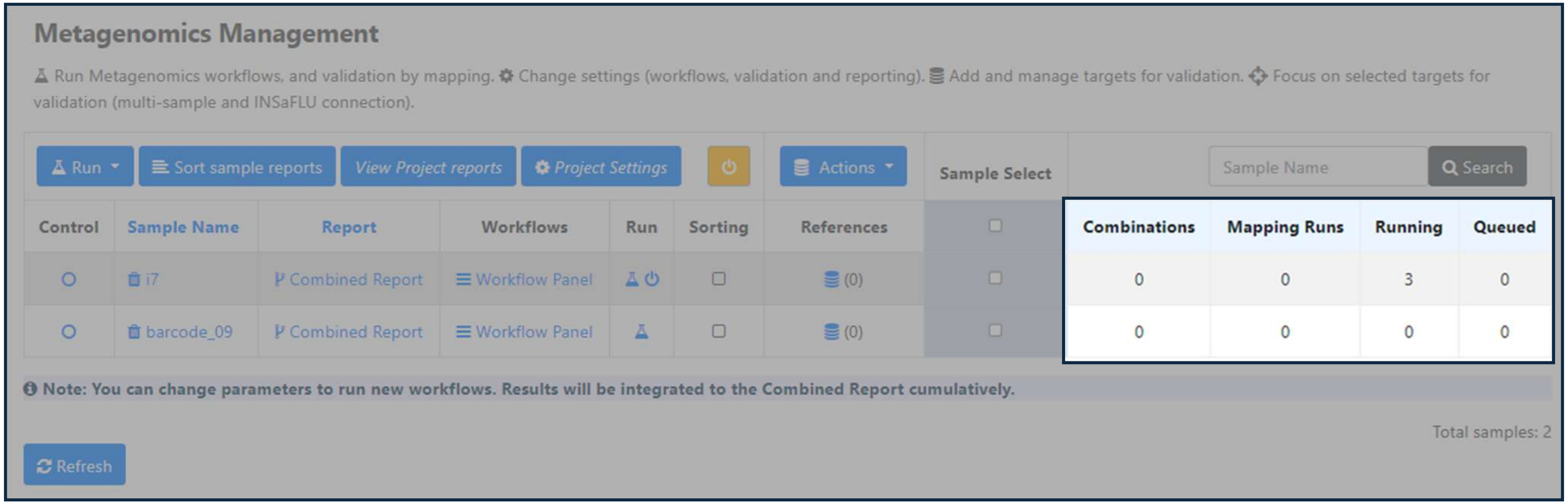
TELEVIR | Virus Detection

Projects | Workflow Management

Monitoring



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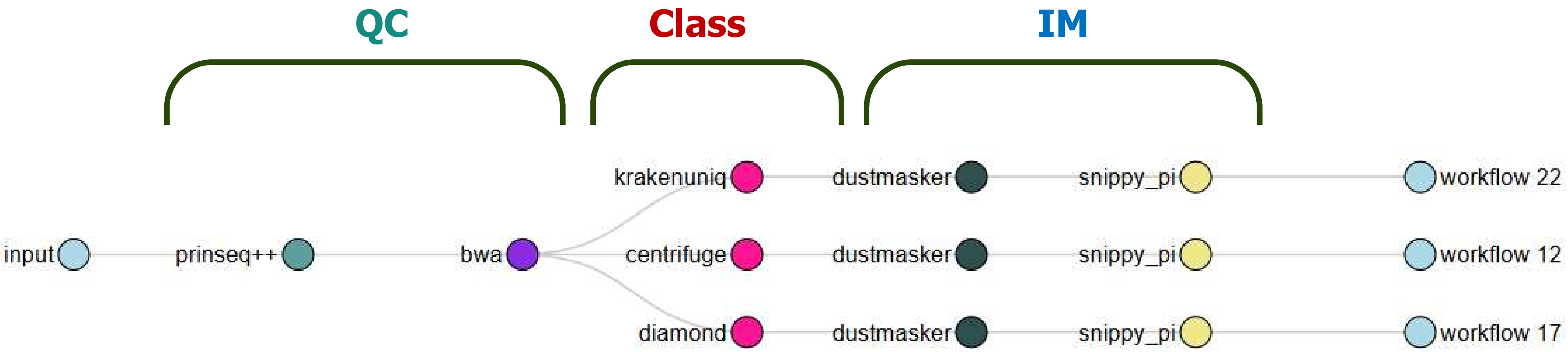

| Modular Deployment

All possible combinations are deployed

Slido questions

Do not edit
How to change the design

Não é possível apresentar a imagem.

4. I sequenced a human blood sample using a shotgun approach. Which steps will help filter out host reads?

Não é possível apresentar a imagem.

The Slido app must be installed on every computer you’re presenting from

Não é possível apresentar a imagem.

5. What is the main purpose of the assemblies produced in TELEVIR workflows?

Questions from chat