EFSA WGS PLATFORM FOR SUPPORTING AMR DATA COLLECTION

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EUROPEAN FOOD SAFETY AUTHORITY

OBJECTIVE OF THE AMR GENE DETECTION SERVICE

To offer to MS the opportunity to use EFSA computing resources for extracting AMR genes from WGS data

To give access to User-Friendly Interface for accessing and managing the data in a secured and private environment, no sharing of data

Automate mapping against the PARAM catalogue and different downloads options for the results

DEFINE THE AMR GENE DETECTION SERVICE

- The AMR gene detection service is...

a web application for extracting AMR genes and mutations conferring resistance to beta-lactams in a standardized format, already mapped against EFSA PARAM catalogue

designed so that all users of the same organization access the same environment and users from other organizations cannot see the data

The AMR gene detection service is not...

a data submission tool, submission remains trough Data Collection Framework (DCF) of EFSA. EFSA cannot use the data temporarily stored in the system

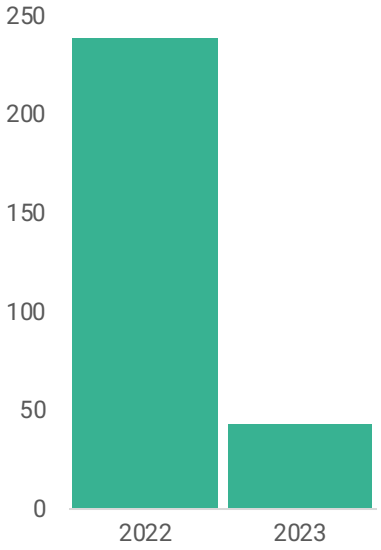
a tool for sharing information among MSs and between MS and EFSA

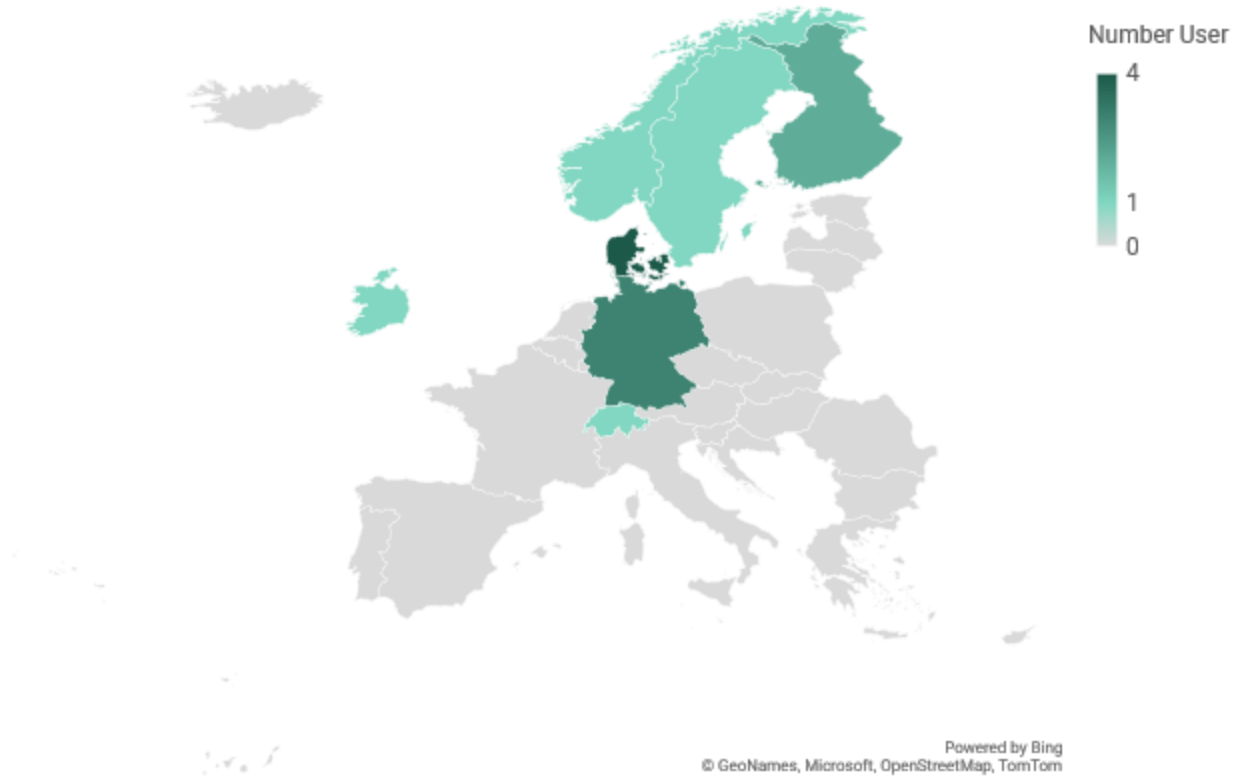
a system allowing permanent storage of raw data

INTRODUCTION TO THE SERVICE

Adaptation of **WGS portal** implemented for One Health WGS system
Use **same pipeline** implemented for the EFSA One Health WGS system - AMR genes are extracted with ResFinder 4.1
Catalogue enrichment of the analytical result → genes found by ResFinder mapped against PARAM catalogue
Option to **download AMR results** in several formats, including precompiled for EFSA submission tool
Access is granted to data providers identified by the Reporting Officer

AMR USERS AND USAGE AS OF MAY 2023





USER ACTIONS

Upload fastq (single, batch) or import from ENA

Execute analytical pipeline

Monitor execution and results

Download results (also in DCF compatible format)

Store or delete

INFORMATION REQUESTED FOR UPLOAD

Isolate ID

- data provider's isolate identification code

Instrument Model

- the model of instrument used for sequencing

Species

- "Salmonella enterica" or "Escherichia coli"

Library Layout

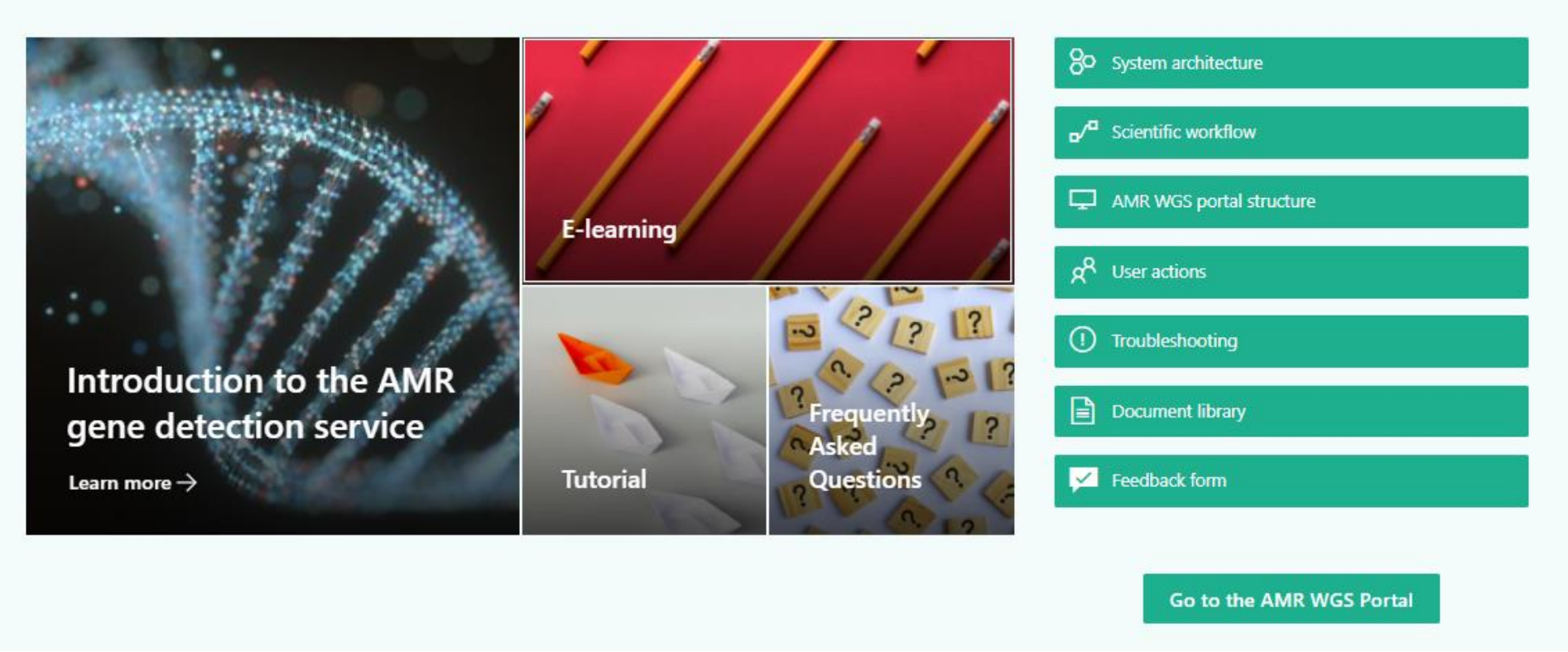
- SINGLE or PAIRED

Raw Reads

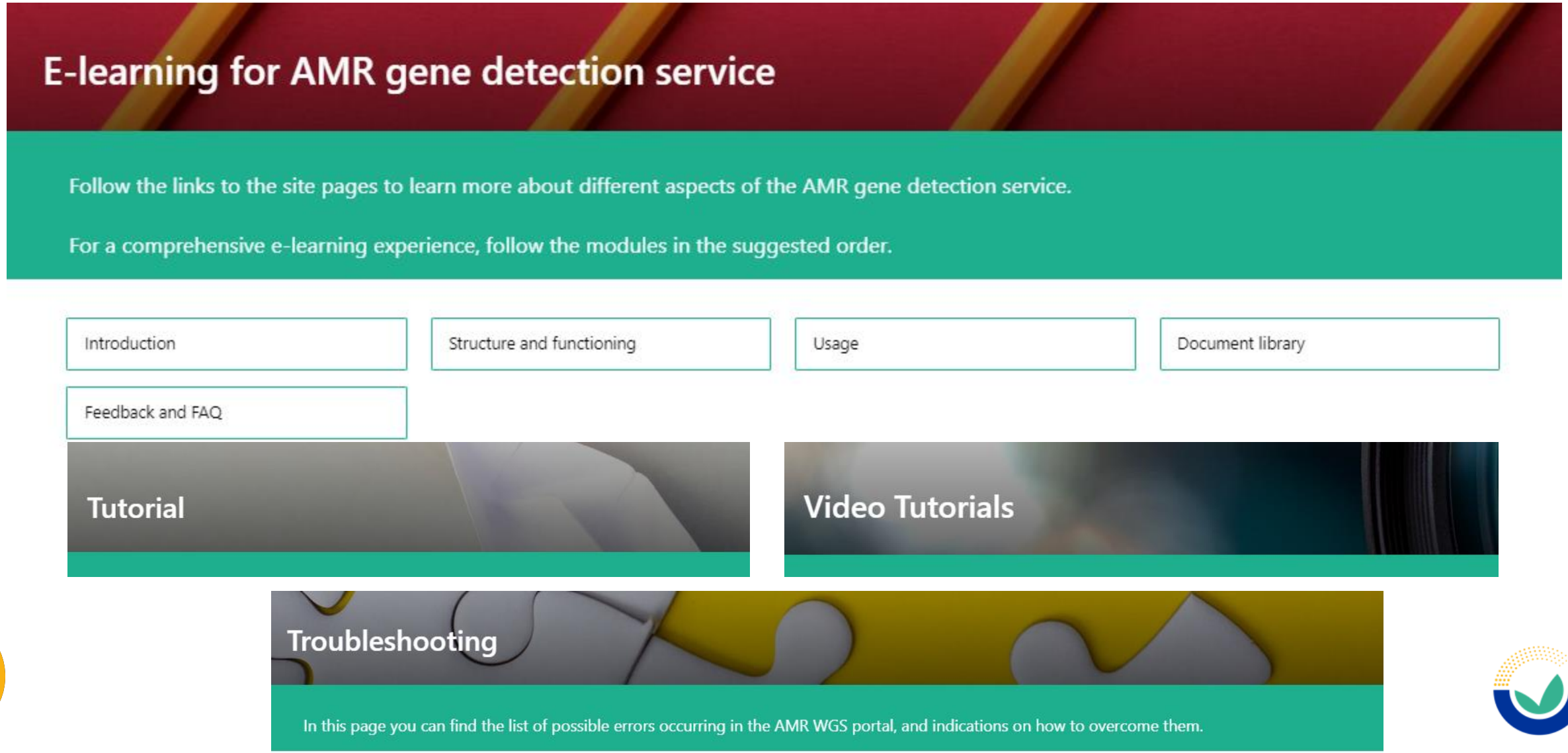
- Names of the FASTQ-files

LEARNING MATERIALS

- Sharepoint website: https://efsa815.sharepoint.com/sites/AMRWGSportaltraining



LEARNING MATERIALS



TAKE HOME MESSAGES

EFSA doesn't consider WGS generated for the scope of AMR monitoring and uploaded to the AMR Gene Extraction Service as submission for outbreak investigation

AMR Gene Extraction Service is not a data collection tool, EFSA cannot use the data upload to the system

Only Data Providers formally appointed from MS for the scope of submitting WGS data for outbreak investigation submit data to the EFSA One Health WGS System

It is on discretion of the MS through the appointed Data providers of the EFSA One Health WGS System to decide if the WGS data generated for AMR monitoring activity can be submitted also with the scope of supporting outbreak investigation

Microsoft Teams

AMR demo

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