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BYTE-Sea: the digital infrastructure of ATLASea, the French marine genome sequencing programme

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² BYTE-Sea Consortium : https://gitlab.com/pepr-atlasea/byte-sea_consortium

³ IFB - Institut Français de Bioinformatique, CNRS UAR 3601, France



Priority research programs and equipment (PEPR)

Funded by the France 2030 framework program. Administered by ANR

Led by CNRS and CEA

Associated to the international ERGA and EBP projects

5 academic partners: Ifremer, MNHN, Aix-Marseille University, Paris Sciences & Lettres and Sorbonne University.

3 French infrastructures: France génomique, IFB, EMBRC-Fr

ATLASea Programme - an atlas of marine genomes

genome sequences of 4500 marine organisms along the French coast



Calls for expressions of interest (2026)

Study of metabolic pathways

Study of ecosystems subject to invasions

WHEEL-Sea (CNRS):
improve and support teaching and training in the field of biodiversity.

DIVE-Sea (MNHN):
sampling expeditions along the French mainland and overseas coasts and interactions with marine stations. Banking of samples.

SEQ-Sea (CEA):
preparation of high quality DNA, sequencing, assembly and annotation of genomes at Genoscope.

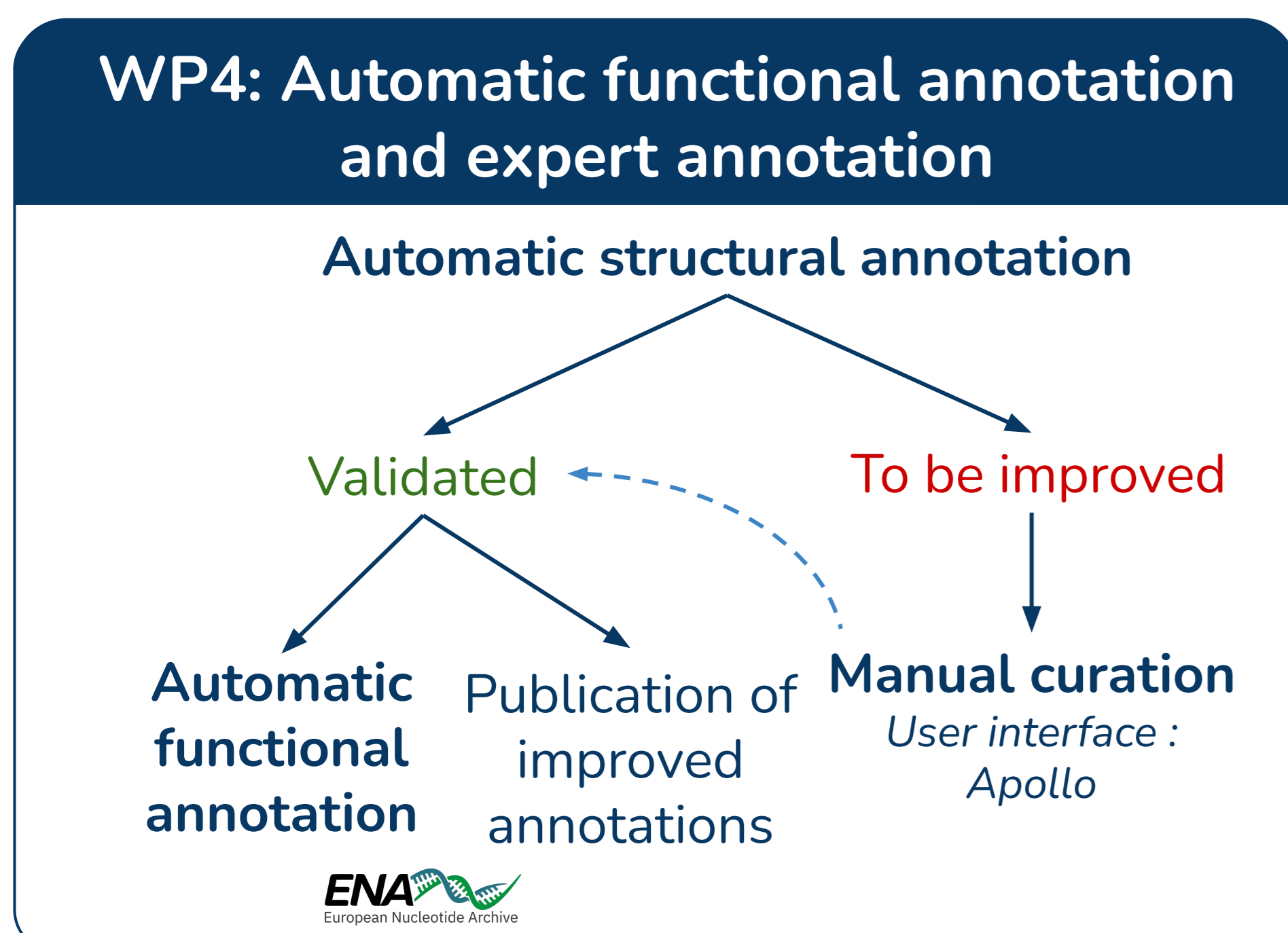
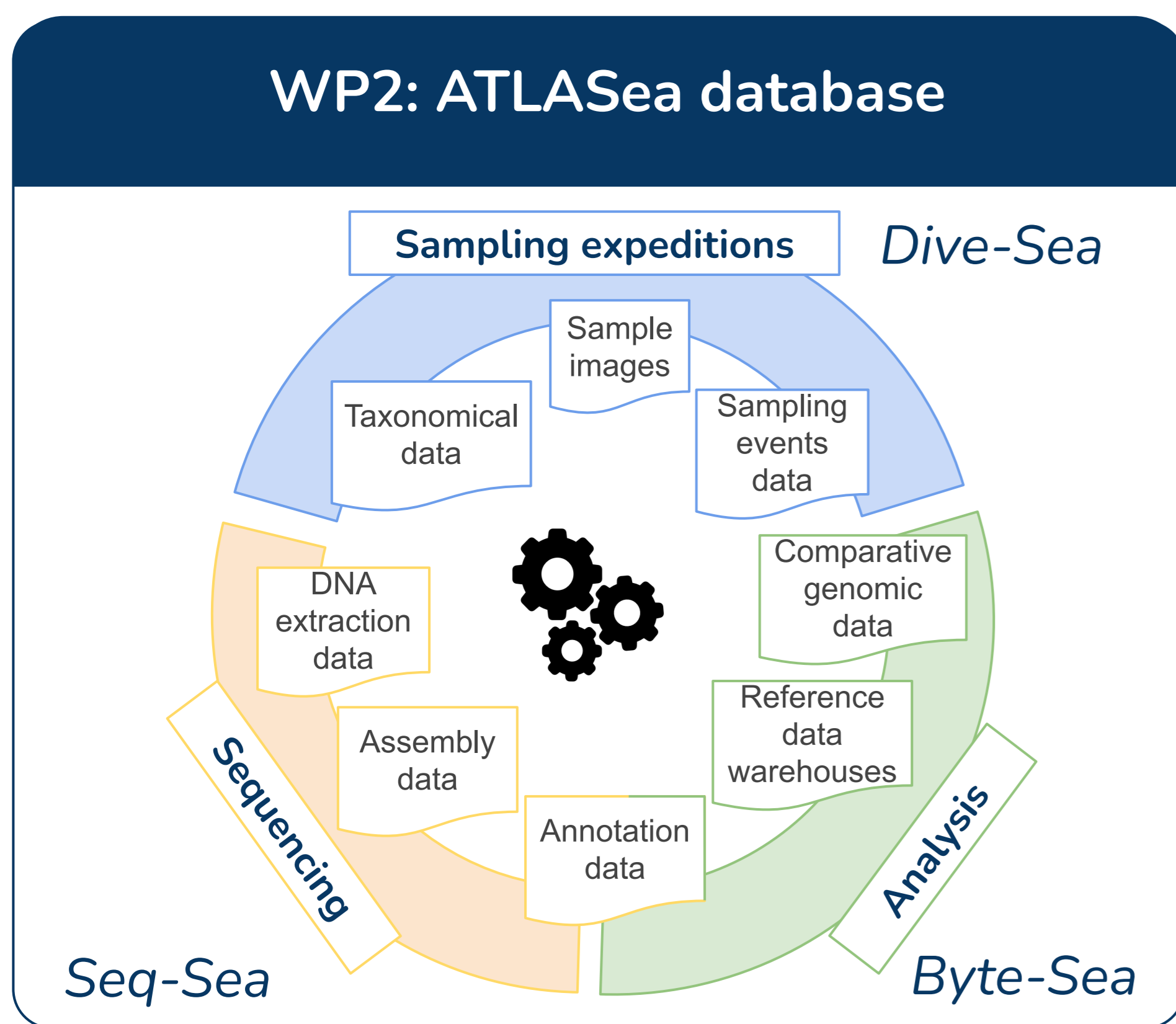
BYTE-Sea (IFB):
IT infrastructure for data storage, integration, display and sharing. Functional and expert annotation and comparative genomics

BYTE-Sea Work packages (WP)

WP1: Infrastructure for storage, computing and software

Partners	IFB	IFREMER	
Infrastructures	BigOuest	IFB Core Cluster	DATARMOR
Storage	Data access and Data Ring		
Computing	Functional annotation & comparative genomics		
Software & services	GitLab repository : Tools and SOP		
Database	Data integrity		
Portal	Services : browsers, web site, API...		

<https://gitlab.com/pepr-atlasea>



WP3: ATLASea portals for data and analysis tools

Tracking portal

Non-contractual image. Taken from the ERGA-Status tracking portal

<https://genomes.cnag.cat/erga-stream/overview/>

Data portal

<https://portal.atlasea.fr>

Genome portal

Biological data: *fasta, gff*

User input: *yaml*

ATLARIS

GitLab CI/CD

Deploy

Lock data

Derived data

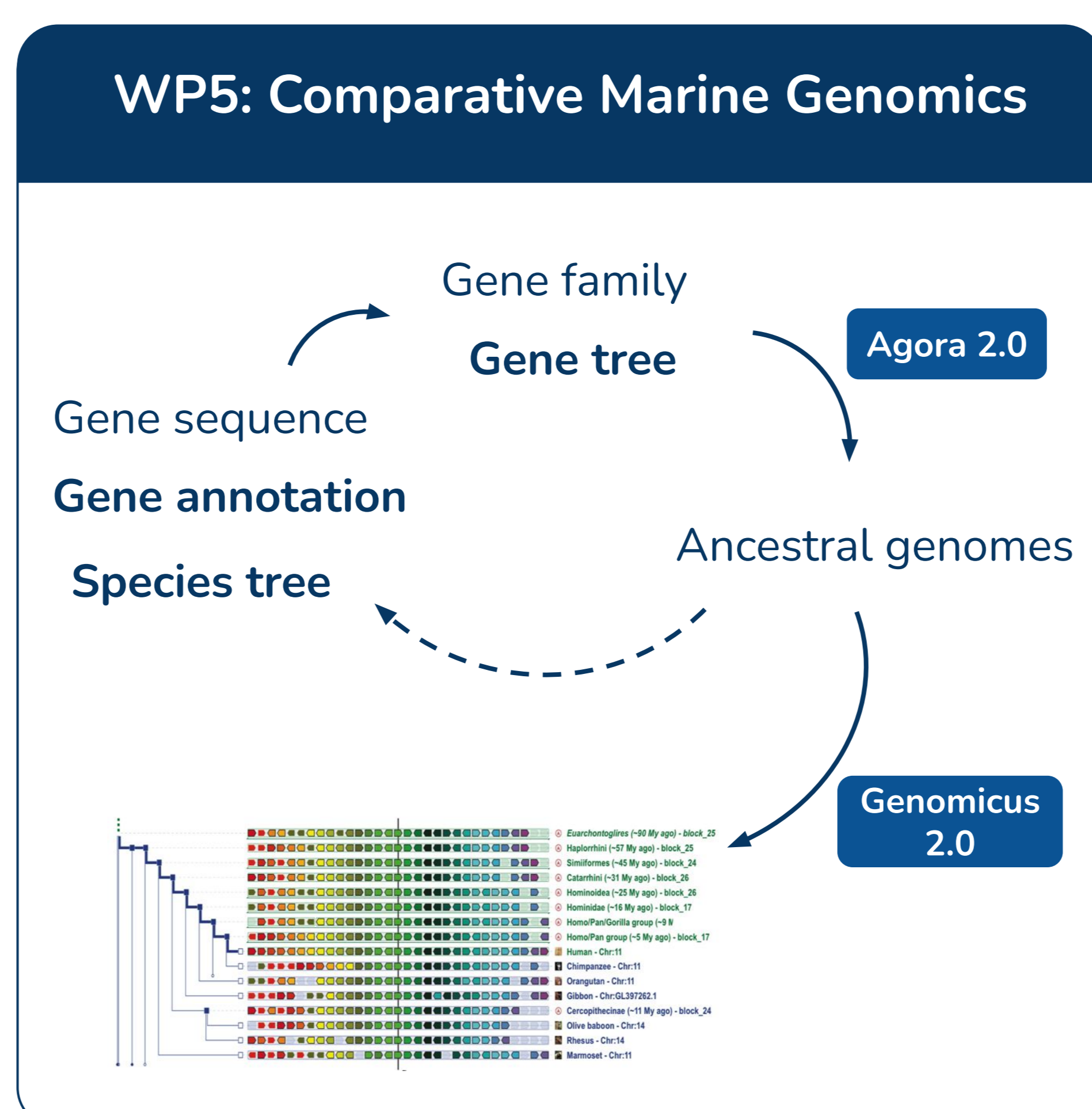
Validate & setup

<https://gitlab.com/beaur1s/beauris>

Data access

European Nucleotide Archive

Galaxy



WP6: Citizen Annotation

Manual curation of genome annotation

Citizens
High school / undergraduate students
Introduction to the world of genomics

Scientific output
Guided and gamified curation web UI
Release of improved gene annotation