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## **The ELIXIR research software ecosystem**

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# The ELIXIR Research Software Ecosystem



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ISMB / ECCB 2023, 23<sup>th</sup>-27<sup>th</sup> July, Lyon, France



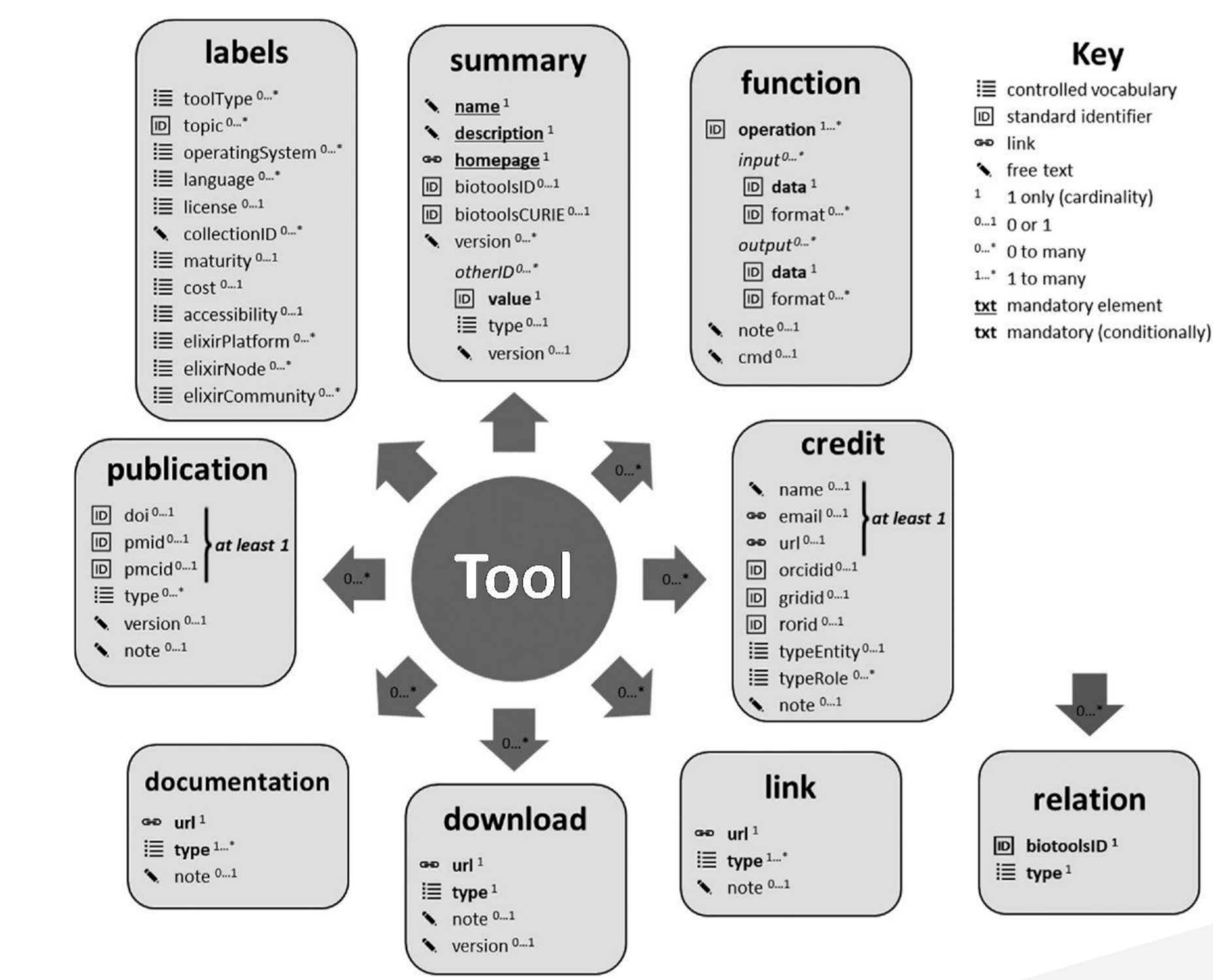
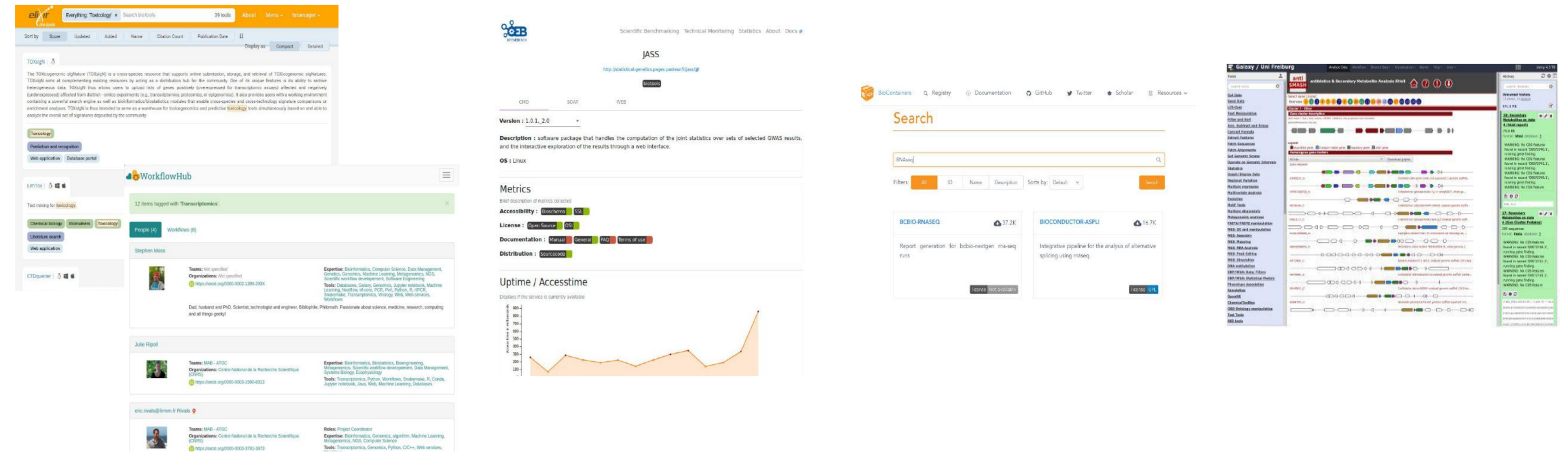
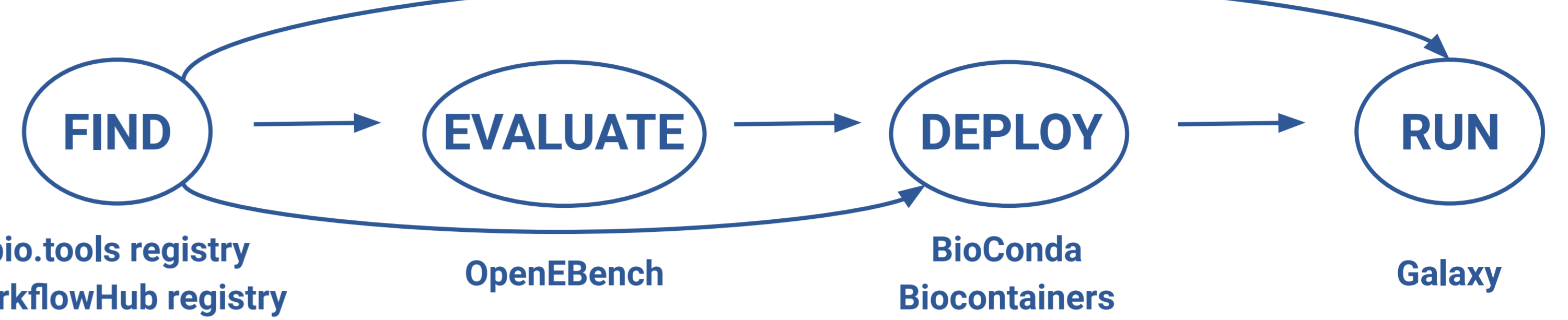
BOSC | Bioinformatics Open Source Conference



Research software is a critical component of computational research. Thus, being able to discover, understand and adequately utilize software is essential. All these activities rely on software metadata. However, these metadata are sparse, expensive to maintain, sometimes is not machine readable, and frequently inconsistent across different resources.

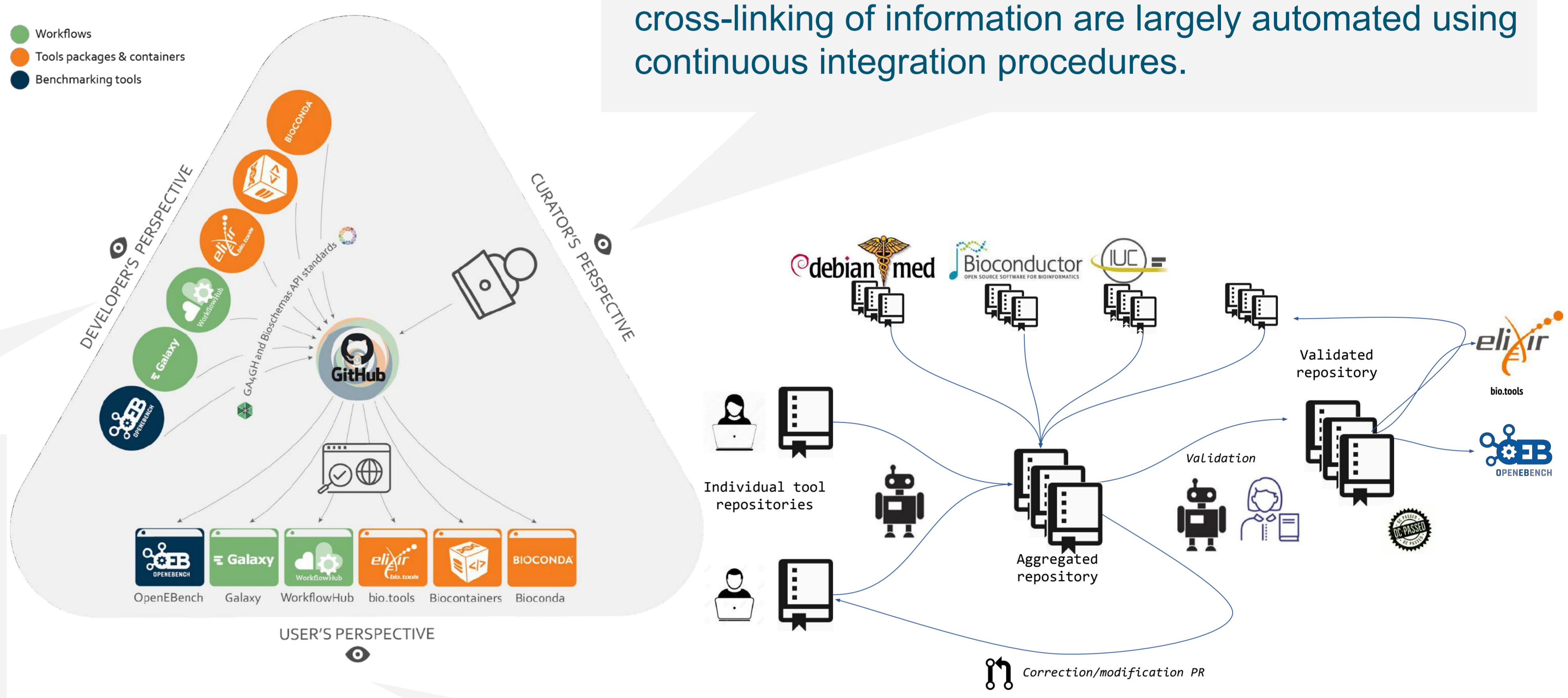
The ELIXIR Research Software Ecosystem acts as a proxy to maintain and preserve high-quality metadata for describing research software, aggregating heterogeneous metadata resources from multiple providers. These providers often have different objectives when they are maintaining and aggregating metadata by themselves, as well as user communities and technical implementations.

The goals of this project are to consolidate these metadata, and facilitate their integration, curation, and re-usability by the contributors and the wider research community.



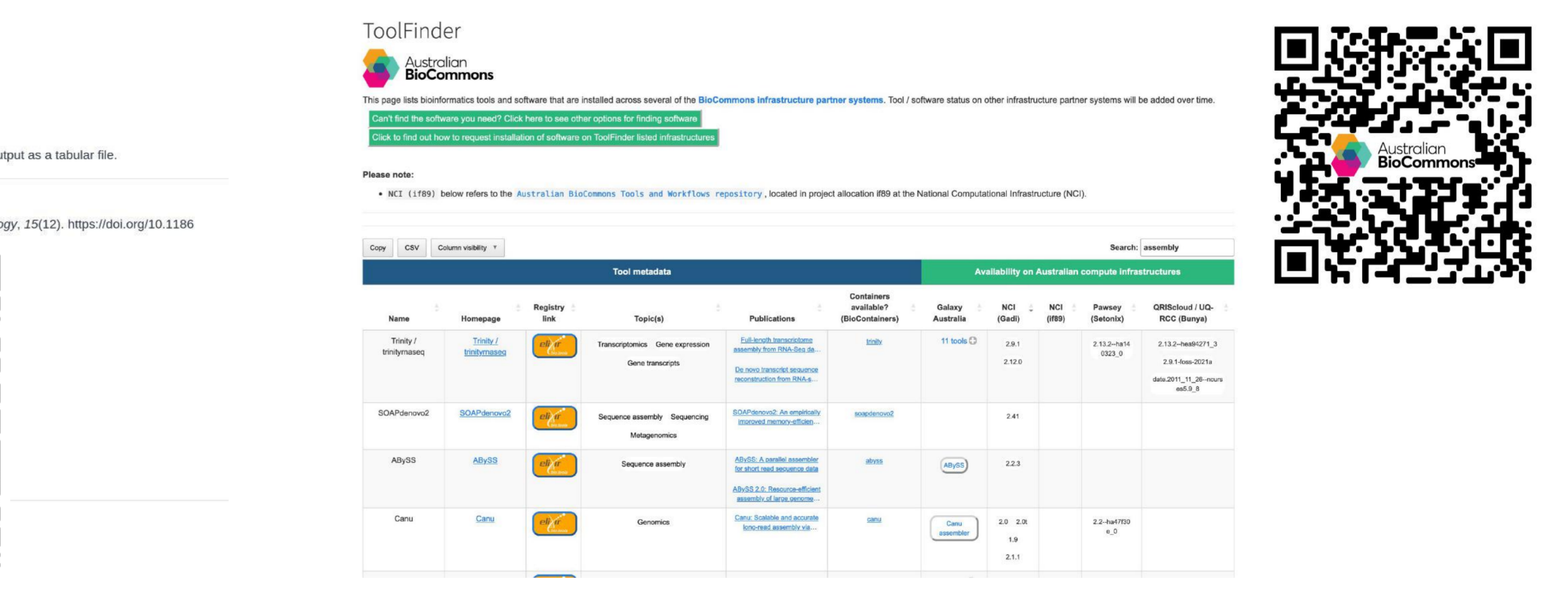
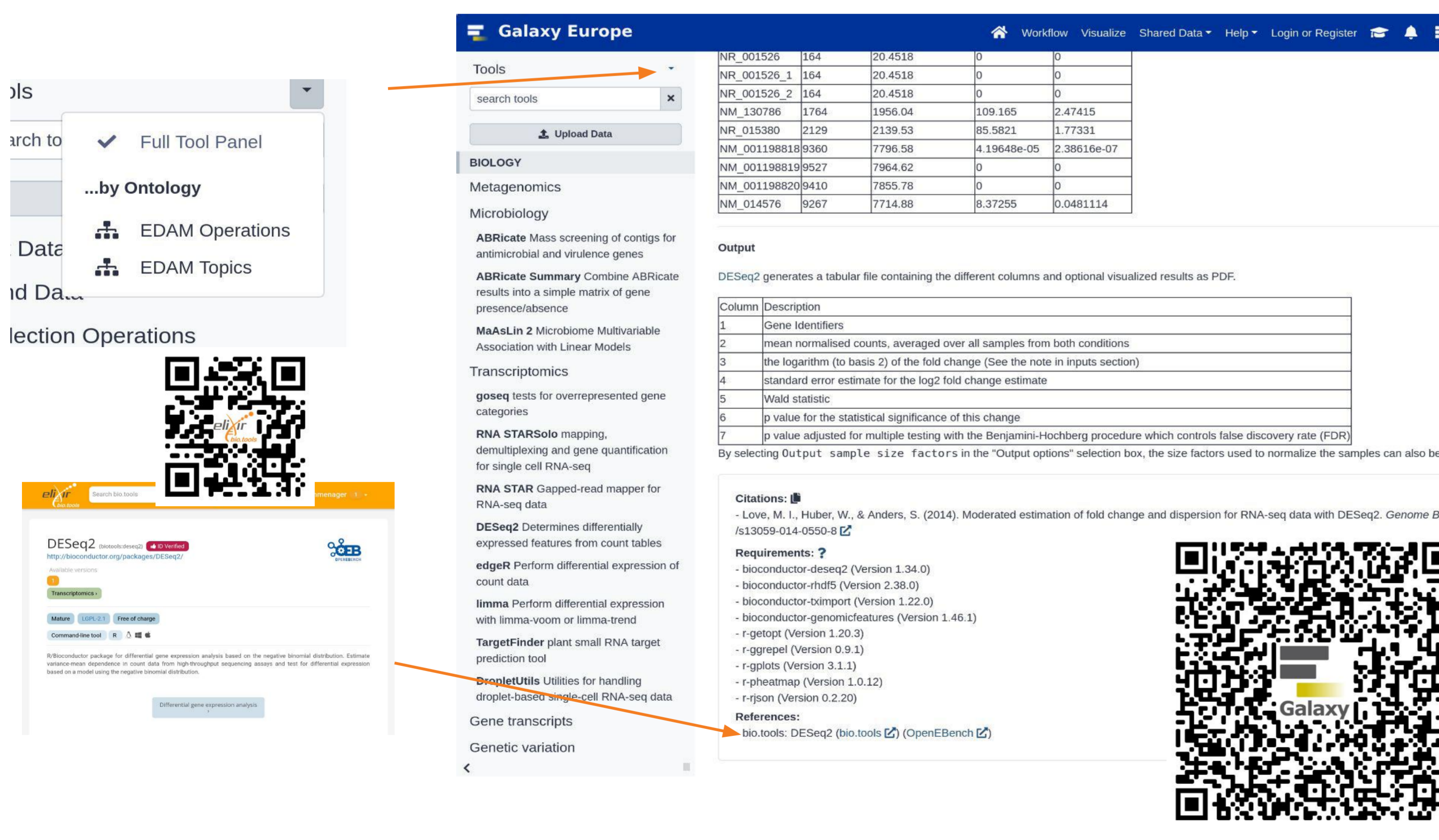
For **developers**, the ecosystem facilitates the description of their software and workflows. It centralizes all the available metadata related to a given software in their source format, but the use and mapping of standards such as EDAM, biotoolsSchema and BioSchemas will facilitate the propagation of these metadata, and improve their overall FAIRness.

For **curators**, the metadata are available in a centralized, open, and version-controlled repository. The maintenance tasks related to the synchronization, quality control, and various cross-validation and cross-linking of information are largely automated using continuous integration procedures.



For **users**, this resource is directly queried by multiple systems, such as:

- The Australian BioCommons ToolFinder, which lists bioinformatics tools and software that are installed across several of the BioCommons partners.
- Galaxy, which uses it e.g. to sort tools according to their EDAM annotations, or to provide links to the corresponding bio.tools entries.
- WorkflowHub, which allows running an already registered Galaxy workflow on usegalaxy.eu



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Project Website: <https://elixir-europe.org/internal-projects/commissioned-services/tools-platform-ecosystem>  
 Source Code: <https://github.com/research-software-ecosystem/>  
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