**FAIR Crib Sheet**

**F = Findable (Meta)data**

Metadata and data should be easy to find for both humans *and* computers. Machine readable persistent identifiers and metadata allow data to be easily and reliably found.

* [**F1. (Meta)data are assigned a globally unique and persistent identifier**](https://www.go-fair.org/fair-principles/fair-data-principles-explained/f1-meta-data-assigned-globally-unique-persistent-identifiers/)
* [**F2. Data are described with rich metadata (defined by R1 below)**](https://www.go-fair.org/fair-principles/fair-data-principles-explained/f2-data-described-rich-metadata/)
* [**F3. Metadata clearly and explicitly include the identifier of the data they describe**](https://www.go-fair.org/fair-principles/f3-metadata-clearly-explicitly-include-identifier-data-describe/)
* [**F4. (Meta)data are registered or indexed in a searchable resource**](https://www.go-fair.org/fair-principles/f4-metadata-registered-indexed-searchable-resource/)

**A = Accessible (Meta)data**

Once the user finds the required data, they need to know how it can they be accessed, either openly or restrictively using authentication and authorisation.

* [**A1. (Meta)data are retrievable by their identifier using a standardised communications protocol**](https://www.go-fair.org/fair-principles/542-2/)
* [**A1.1 The protocol is open, free, and universally implementable**](https://www.go-fair.org/fair-principles/a1-1-protocol-open-free-universally-implementable/)
* [**A1.2 The protocol allows for an authentication and authorisation procedure, where necessary**](https://www.go-fair.org/fair-principles/a1-2-protocol-allows-authentication-authorisation-required/)
* [**A2. Metadata are accessible, even when the data are no longer available**](https://www.go-fair.org/fair-principles/a2-metadata-accessible-even-data-no-longer-available/)

**I = Interoperable (Meta)data**

The data usually need to be integrated with other data and need to interoperate with applications or workflows for analysis, storage, and processing.

* [**I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.**](https://www.go-fair.org/fair-principles/i1-metadata-use-formal-accessible-shared-broadly-applicable-language-knowledge-representation/)
* [**I2. (Meta)data use vocabularies that follow FAIR principles**](https://www.go-fair.org/fair-principles/i2-metadata-use-vocabularies-follow-fair-principles/)
* [**I3. (Meta)data include qualified references to other (meta)data**](https://www.go-fair.org/fair-principles/i3-metadata-include-qualified-references-metadata/)

**R = Reusable (Meta)data**

The goal of FAIR is to optimise the reuse of data. To achieve this, data should be well-described with metadata, with a clear and accessible licence, so they can be replicated and/or combined in different settings.

* [**R1. (Meta)data are richly described with a plurality of accurate and relevant attributes**](https://www.go-fair.org/fair-principles/r1-metadata-richly-described-plurality-accurate-relevant-attributes/)
* [**R1.1. (Meta)data are released with a clear and accessible data usage license**](https://www.go-fair.org/fair-principles/r1-1-metadata-released-clear-accessible-data-usage-license/)
* [**R1.2. (Meta)data are associated with detailed provenance**](https://www.go-fair.org/fair-principles/r1-2-metadata-associated-detailed-provenance/)
* [**R1.3. (Meta)data meet domain-relevant community standards**](https://www.go-fair.org/fair-principles/r1-3-metadata-meet-domain-relevant-community-standards/)