

FAIR Principles	BRICS Functional Components that support FAIR					
	Global Unique Identifier (GUID)	Data Dictionary	Repository	ProFoRMs	Query Tool	MetaStudy
Findable						
F1. (meta)data are assigned a globally unique and eternally persistent identifier.	Participants deidentified (for confidentiality), using Global Unique ID (GUID). Same GUID can be used regardless of site/study allowing for the aggregation of data	Common Data Elements (CDEs) have a unique ID.	Research Studies are findable by digital object identifiers. Data sets are findable by unique identifiers			Meta-studies are findable by Digital Object Identity (DOI)
F2. data are described with rich metadata .		Data is defined by use of CDEs for domain specific systems. https://cde.nlm.nih.gov/	Core metadata (DATS: Data Tag Suite 2.2 specification) can be associated with a study. In addition, files (publication, protocol, etc.) can be uploaded and associated with studies.		Downloaded data have an associated file with abbreviated CDE definitions	Core metadata (DATS: specification) can be associated with a study. In addition, files (publication, protocol, etc.) can be uploaded and associated with studies.
F3. metadata clearly and explicitly include the identifier of the data it describes.		CDEs has IDs	Each Study has a DOI available from a BRICS open site			Each MetaStudy has a DOI available from a BRICS open site
F4. (meta)data are registered or indexed in a searchable resource .		Each BRICS instance has a public facing CDE dictionary. (e.g. https://fitbir.nih.gov/content/data-dictionary)	DATS 2.2 specification supported, searchable across studies for many study attributes. (DATS tags will be embedded in the pubic site of BRICS instances - in progress)			
Accessible						
A1. (meta)data are retrievable by their identifier using a standardized communications protocol.		CDEs are retrievable from repository or from the external public website.				
A1.1 the protocol is open, free, and universally implementable.		supported by - REST API, GUI				
A1.2 the protocol allows for an authentication and authorization procedure, where necessary.	Central Authentication Service (CAS) is a single sign-on protocol for the web	CAS is a single sign-on protocol for the web	CAS is a single sign-on protocol for the web	CAS is a single sign-on protocol for the web	CAS is a single sign-on protocol for the web	CAS is a single sign-on protocol for the web
A2. metadata are accessible, even when the data are no longer available.		CDEs will be available via NIHs' sites: https://cde.nlm.nih.gov/ and https://www.commondataelements.ninds.nih.gov/TBI.aspx#tab=Data_Standards				
Interoper-able						
I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.		All CDEs are made available through BRICS public websites.	DATS specification (metadata).			
I2. (meta)data use vocabularies that follow FAIR principles.		Disease specific CDEs accessed from National Library of Medicine (NLM), NINDS CDE project, CDISC, PROMIS, NIH Toolbox, etc.	DATS specification (metadata).	Data can be collected, using ProFoRMs, consistently with CDEs	Data is queried and harmonized, consistently with CDEs	
I3. (meta)data include qualified references to other (meta)data		Each data element has an attribute that includes a qualified reference.			All data is validated against CDEs	
Reusable						
R1. meta(data) have a plurality of accurate and relevant attributes .		Each CDE has numerous attributes that fully describes the data element	DATS specification (metadata) used to define studies		Data is fully described by the CDE definitions and accessible through an RDF mechanism	DATS specification (metadata) used to define meta studies
R1.1. (meta)data are released with a clear and accessible data usage license .		CDEs are freely retrievable from repository or from the external public website.	All BRICS instances support various policies that have a clear accesibility data usage agreements.			All BRICS instances support various policies that have a clear accesibility data usage agreements
R1.2. (meta)data are associated with their provenance .		Data dictionary support CDE versioning and provenance.	DATS specification 2.2 (metadata) used to define studies System supports data provenance through DOIs and dataset IDs		There is data provenance in versions of the submitted data	DATS specification 2.2 (metadata) used to define studies System supports data provenance through DOIs and dataset IDs
R1.3. (meta)data meet domain-relevant community standards .		CDE for specific diseases from either the National Library of Medicine (NLM), NINDS CDE project, and CDISC, PROMIS, NIH Toolbox ...	Imaging and genomics data are submitted using standard formats (e.g. imaging: DICOM, NIFTI, etc.)			