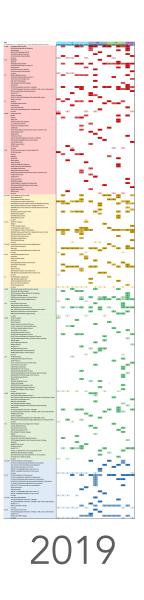
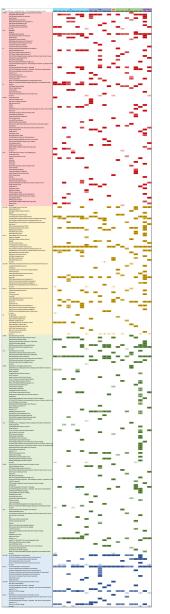
Data analysis on FIPs

Summary tables / charts https://docs.google.com/spreadsheets/d/1jg9uV2UiK7DpRVvXIRkIN6X-H_TNPvu9oy91E8E1cBl/edit?usp=sharing







2021			air				ater		earth		life		multi-domai
	FER in use, 2 - available FER in plan, 1 - FER in development, planned, 0 no choice	ACTRIS ACTRIS ACRI	S- ACTRIS ACTRIS	ACTRIS IAGOS EI	SCAT ARGO	EMSO L	W SeaDat	SeaDat E	EPOS AnaEl	E AnaEE-	Danub DiSSCo	eLTER- LWER	I ICOS SIOS
F1-MD	DA RA DOI registration agency for social and economic data DOI Digital Object Identifier ePIC Persistent Identifier for eResearch Handle System NSId Natural Science Identifier	3 2	2 3 3	3 <u>3</u> 3	3 2 2	3	3	3	3	•	2	3 3 3	3 3 3
	ORCID Open Researcher and Contributor ID SDN CDI PID SeaDataNet CDI PID URI Uniform Resource Identifier		2 2				3		3	_			3
	UUID Universally Unique Identifier no choice	3 3		3	0				3	0			3
F1-D	B2HANDLE				0		3			0			
	DEIMS.ID											3	
	DOI Digital Object Identifier	3 3 2	2 2	3 3	3			3	3	2	2	3 3	3 3
	ePIC Persistent Identifier for eResearch	2		3									3
	Handle System		3 3		3							3	3
	NSId Natural Science Identifier							_			1		
	ORCID Open Researcher and Contributor ID								3				
	PURL Persistent Uniform Resource Locator					3	_						
	URI Uniform Resource Identifier						3						_
	UUID Universally Unique Identifier									-			3
	CKAN Comprehensive Knowledge Archive Network		_			_			3				
	DataCite Metadata Scheme	3	2	3 3	3		3						3
	DCAT Data Catalog Vocabulary Version 2										2		
	DCAT Data Catalog Vocabulary Version 3 DCAT-AP Data Catalog Vocabulary Application Profile for Data Portals in Europe						2						
	DIF Directory Interchange Format						2						
	EML GBIF Profile Metadata						2		2				
	EML2.2.0 Ecological Metadata Language 2.2.0								~			2	
	European Plate Observing System - Data Catalogue vocabulary - Application Profi								3				-
	INSPIRE EMF						2						
	ISO 19115 Geographic information - Metadata	3		3 3			3	3	3		2	3	3
	ISO 19139 Geographic information - Metadata - XML schema implementation			3								3 3	
	MET Norway Metadata Format Specification												3
	NetCDF CF-1.7		3 3		3						2		
	OceanSITES Data Format					3							
	openDS Open Digital Specimens										1		
	schema.org dataset				3		2				2		3
	SDN2_CDI_ISO19139 SeaDataNet CDI metadata XML schema						3						
	WMO Core Profile World Meteorological Organization Core Metadata Profile	3 3	2	2									
3	DataCite	3 3 3	2	3 3	3	3			3			3	
	DOI Digital Object Identifier							3		2	2	3	
	FDO Fair Digital Object										2		
	Handle System		3 3										
	LOD Linked Open Data												3
	SDN CDI PID LUI SeaDataNet CDI to PID lookup index						3						
	no choice	1			0		0		0				0

FIP basic statistics

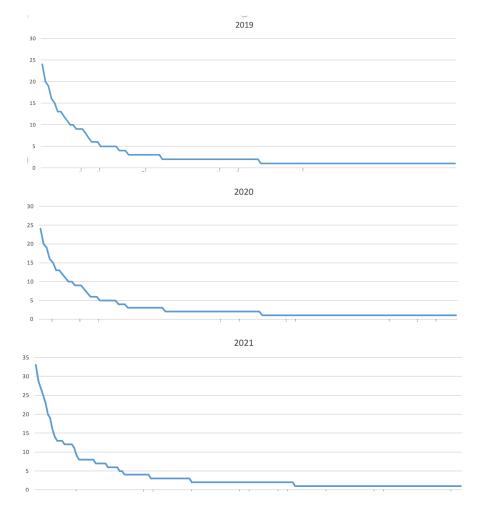
Number of FIP Wizard questions: 21



Number of RIs: 14 Number of FICs: 22 Number of assessment cycles: 3 (2019, 2020, 2021) Total number of FIPs: 57

> Total number of FERs declared: 193 Total number of triples captured: 1852 Total number of implementation choices: 219 most FERs: I2 MD and D most no choices: A2 (followed by R1.1 MD, R1.2 MD, I1 D)

FIP basic statistics



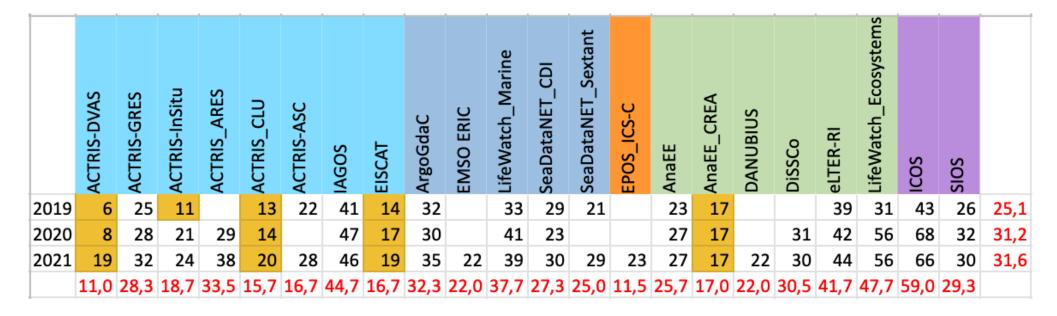
DOI Digital Object Identifier	33
CC BY 4.0 Attribution 4.0 International	29
HTTPS Hypertext Transfer Protocol Secure	27
PROV-O The PROV Ontology	25
NetCDF CF-1.7	23
DataCite	20
Open Data	19
ISO 19115 Geographic information - Metadata	16
NetCDF Network Common Data Form	14
Handle System	13
NVS NERC Vocabulary Service	13
REST Representational state transfer	13
DataCite Metadata Scheme	12
ORCID Open Researcher and Contributor ID	12
RDFS Resource Description Framework Schema	12
XMLS eXtensible Markup Language Schema	12
OPeNDAP Open-source Project for a Network Data Access Protocol	11

Number FERs per FAIR Principle

FAIR principle	Question	FER type	FER count
<u>F1</u>	What globally unique, persistent, resolvable identifiers do you use for metadata records/datasets?	Identifier type	10
<u>F2</u>	Which metadata schemas do you use for findability?	Metadata schema	19
<u>F3</u>	What is the technology that links the persistent identifiers of your data to the metadata description?	Metadata-Data linking mechanism	6
<u>F4</u>	In which search engines are your metadata records/datasets indexed?	Search engines	28
<u>A1.1</u>	Which standardized communication protocol do you use for metadata records/datasets?	Communication protocol	15
<u>A1.2</u>	Which authentication & authorisation technique do you use for metadata records/datasets?	Authentication & authorisation technique	13
<u>A2</u>	Which metadata longevity plan do you use?	Metadata longevity	10
<u>11</u>	Which knowledge representation languages (allowing machine interoperation) do you use for metadata records/datasets?	Knowledge representation language	7
<u>I2</u>	Which structured vocabularies do you use to annotate your metadata records/datasets?	Structured vocabularies	29
<u>I3</u>	Which models, schema(s) do you use for your datasets?	Data schema	23
<u>R1.1</u>	Which usage license do you use for your metadata records/datasets?	Data usage license	8
<u>R1.2</u>	Which metadata schemas do you use for describing the provenance of your metadata records/datasets?	Provenance model	6

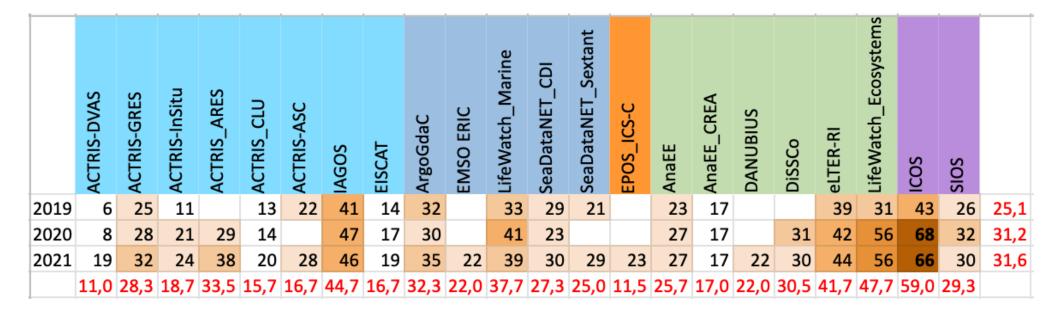
Total FERs = 174 Average per Principle = 15

Number FERs per community (FIP length)



Incomplete FIPs (number FERs less than 21)

Number FERs per community (FIP length)



Maximum = 68 Average = 28

FIP Overlap 2019

ACTRIS_CLU	ACTRIS_CLU	ACTRIS_DVAS	u ACTRIS_GRES	م ACTRIS_InSitu	u ACTRIS_ASC	a IAGOS	N EISCAT	o ArgoGdac2	4 lw-marine	SeaDataNet-CDI	SeaDataNet-Sextant	AnaEE_CREA	Anaee	ω LWERIC_Ecosystem	u eLTER-RI		a SIOS	62
ACTRIS_DVAS	2	~	1	2	1		1	1	-	-	~	1	-	1	1	1	1	15
ACTRIS_GRES	- 5	1	_	3	13	15	2	_	5	2	5	3	6	5	7	11	11	101
ACTRIS_InSitu	3	2	3		2	4	1	2	1	2	2	1	1	2	4	4	5	39
ACTRIS_ASC	5	1	_	2		12	2	7	5	1	4	2	5	5	5	9	9	87
IAGOS	6	2	15	4	12		4	10	7	6	9	6	9	9	9	14	11	133
EISCAT	2	1	2	1	2	4		4	2		1	3	2	1	4	5	1	35
ArgoGdac	6	1	7	2	7	10	4		6	5	6	5	5	6	5	11	6	92
lw-marine	4		5	1	5	7	2	6		1	6	4	4	7	8	10	4	74
SeaDataNet-CDI	2		2	2	1	6		5	1		6	2	3	6	3	6	5	50
SeaDataNet-Sextant	2		5	2	4	9	1	6	6	6		3	5	5	8	9	6	77
AnaEE_CREA	2	1	3	1	2	6	3	5	4	2	3		5	4	3	6	3	53
Anaee	2		6	1	5	9	2	5	4	3	5	5		6	5	6	7	71
LWERIC_Ecosystem	3	1	5	2	5	9	1	6	7	6	5	4	6		6	9	5	80
eLTER-RI	5	1	7	4	5	9	4	5	8	3	8	3	5	6		12	8	93
ICOS	7	1	11	4	9	14	5	11	10	6	9	6	6	9	12		10	130
SIOS	6	1	11	5	9	11	1	6	4	5	6	3	7	5	8	10		98
	62	15	101	39	87	133	35	92	74	50	77	53	71	80	93	130	98	1290

FIP Overlap 2020

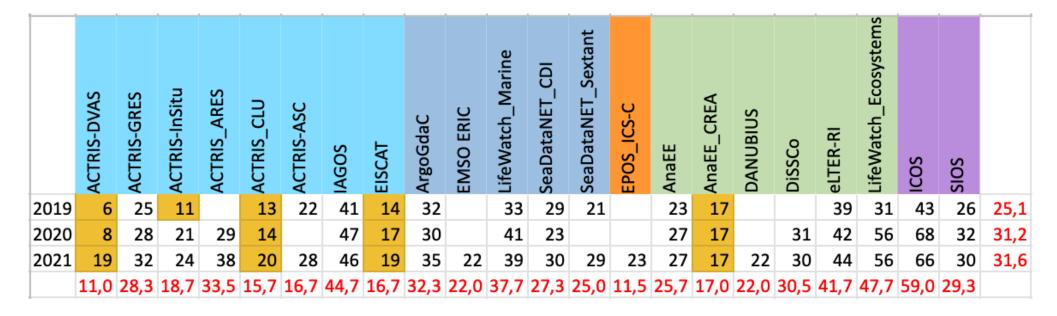
	ACTRIS_DVAS	ACTRIS_GRES	ACTRIS_InSitu	ACTRIS-ARES	ACTRIS_CLU	ACTRIS_ASC	IAGOS	EISCAT	ArgoGdac2	lw-marine	SeaDataNet-Sextant	LWERIC_Ecosystem	Anaee	AnaEE_CREA	DiSSCo	eLTER-RI	ICOS	SIOS	
ACTRIS_DVAS		1	2	1	2	1	2	1	1			1	1	1		1	2	2	19
ACTRIS_GRES	1		8	6	6	13	16	3	8	7	5	5	7	3	3	8	14	11	124
ACTRIS_InSitu	2	8		4	5	7	10	2	6	3	4	6	5	2	1	5	9	12	91
ACTRIS-ARES	1	6	4		5	6	6	1	3	2	1	2	2	1	2	3	5	5	55
ACTRIS_CLU	2	6	5	5		6	7	2	6	4	2	4	3	2	4	5	7	6	76
ACTRIS_ASC	1	13	7	6	6		12	2	7	6	4	4	6	2	3	6	8	9	102
IAGOS	2	16	10	6	7	12		3	10	9	10	9	9	5	6	11	19	13	157
EISCAT	1	3	2	1	2	2	3		3	3	1	1	2	2	1	5	6	2	40
ArgoGdac	1	8	6	3	6	7	10	3		6	5	6	5	4	3	4	12	6	95
lw-marine		7	3	2	4	6	9	3	6		7	9	5	5	8	11	13	5	103
SeaDataNet-Sextant		5	4	1	2	4	10	1	5	7		6	5	3	3	9	9	6	80
LWERIC_Ecosystem	1	5	6	2	4	4	9	1	6	9	6		7	4	3	7	7	6	87
Anaee	1	7	5	2	3	6	9	2	5	5	5	7		7	2	6	8	8	88
AnaEE_CREA	1	3	2	1	2	2	5	2	4	5	3	4	7		2	3	7	3	56
DiSSCo		3	1	2	4	3	6	1	3	8	3	3	2	2		5	6	2	54
eLTER-RI	1	8	5	3	5	6	11	5	4	11	9	7	6	3	5		13	8	110
ICOS	2	14	9	5	7	8	19	6	12	13	9	7	8	7	6	13		12	157
SIOS	2	11	12	5	6	9	13	2	6	5	6	6	8	3	2	8	12		116
	19	124	91	55	76	102	157	40	95	103	80	87	88	56	54	110	157	116	1610

FIP Overlap 2021

	ACTRIS_DVAS	ACTRIS_GRES	ACTRIS_InSitu	ACTRIS_CLU	ACTRIS-ARES	ACTRIS_ASC	IAGOS	EISCAT	ArgoGdac2	EMSO	lw-marine	SeaDataNet-CDI	SeaDataNet-Sextant	EPOS-ERIC	Anaee	AnaEE_CREA	DANUBIUS	DiSSCo	eLTER-RI	LWERIC_Ecosystem	Icos	SIOS	
ACTRIS_DVAS		11	11	8	8	11	9	2	6	4	4	2	5	3	7	4	4	3	4	5	7	7	125
ACTRIS_GRES	11		13	13	11	18	19	4	10	5	9	3	9	7	9	5	7	5	9	7	16	13	203
ACTRIS_InSitu	11	13		10	8	12	13	3	8	5	5	5	8	4	7	4	5	3	6	7	11	13	161
ACTRIS-ARES	8	11	8	8		9	12	3	7	4	5	1	4	5	4	4	5	2	5	5	13	7	130
ACTRIS_CLU	8	13	10		8	12	10	3	8	4	6	2	7	6	5	4	5	5	7	6	10	7	146
ACTRIS_ASC	11	18	12	12	9		14	3	9	5	8	2	8	5	8	4	6	5	7	6	10	11	173
IAGOS	9	19	13	10	12	14		4	11	6	10	7	12	7	9	5	7	6	12	10	20	13	216
EISCAT	2	4	3	3	3	3	4		5	2	3	3	3	2	2	2	1	1	5	1	7	2	61
ArgoGdac	6	10	8	8	7	9	11	5		8	7	6	10	3	6	5	6	4	5	7	14	6	151
EMSO	4	5	5	4	4	5	6	2	8		4	4	7	3	4	4	4	1	2	6	7	4	93
lw-marine	4	9	5	6	5	8	10	3	7	4		3	7	4	6	5	5	9	10	9	13	5	137
SeaDataNet-CDI	2	3	5	2	1	2	7	3	6	4	3		10	2	3	2	4	1	4	7	8	6	85
SeaDataNet-Sextant	5	9	8	7	4	8	12	3	10	7	7	10		4	8	5	6	3	8	9	12	9	154
EPOS-ERIC	3	7	4	6	5	5	7	2	3	3	4	2	4		3	3	1	4	7	4	8	5	90
Anaee	7	9	7	5	4	8	9	2	6	4	6	3	8	3		7	6	2	6	7	8	8	125
AnaEE_CREA	4	5	4	4	4	4	5	2	5	4	5	2	5	3	7		4	2	3	5	7	3	87
DANUBIUS	4	7	5	5	5	6	7	1	6	4	5	4	6	1	6	4		1	3	5	8	6	99
DiSSCo	3	5	3	5	2	5	6	1	4	1	9	1	3	4	2	2	1		5	3	7	2	74
eLTER-RI	4	9	6	7	5	7	12	5	5	2	10	4	8	7	6	3	3	5		6	12	8	134
LWERIC_Ecosystem	5	7	7	6	5	6	10	1	7	6	9	7	9	4	7	5	5	3	6		9	6	130
ICOS	7	16	11	10	13	10	20	7	14	7	13	8	12	8	8	7	8	7	12	9		11	218
SIOS	7	13	13	7	7	11	13	2	6	4	5	6	9	5	8	3	6	2	8	6	11		152
	125	203	161	146	130	173	216	61	151	93	137	85	154	90	125	87	99	74	134	130	218	152	2944

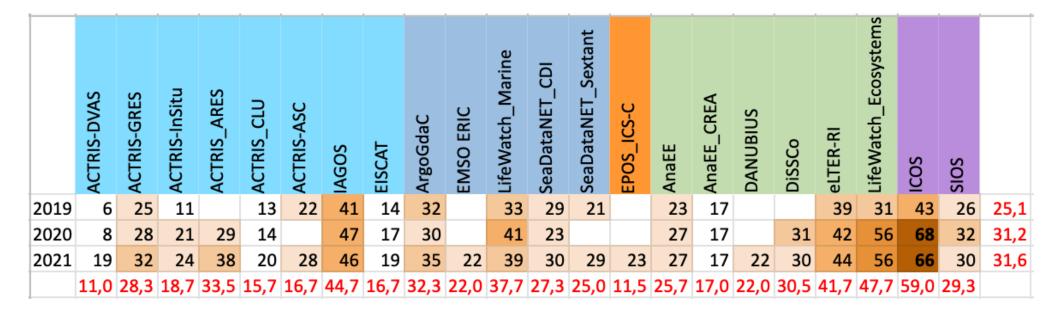
Data analysis on FIPs: Implications for convergence

Number FERs per community (FIP length)

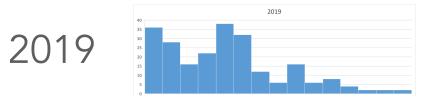


Incomplete FIPs (number FERs less than 21)

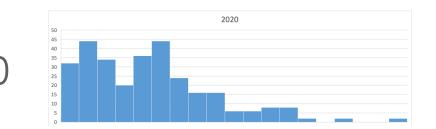
Number FERs per community (FIP length)



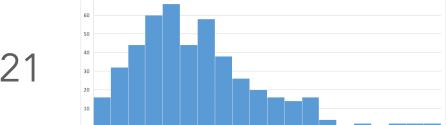
Maximum = 68 Average = 28



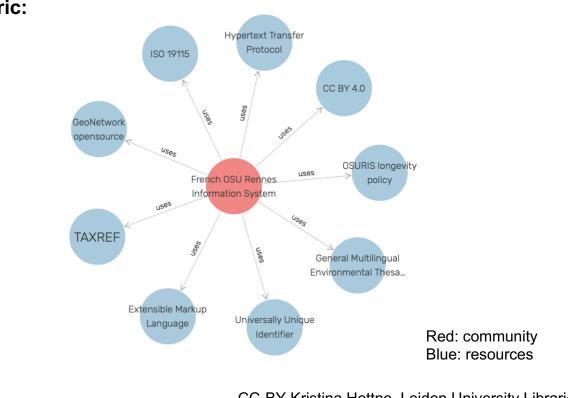
									_					_				
ACTRIS_DVAS	2		1	2	1	2	1	1				1		1	1	1	1	15
EISCAT	2	1	2	1	2	4		4	2		1	3	2	1	4	5	1	35
ACTRIS_InSitu	3	2	3		2	4	1	2	1	2	2	1	1	2	4	4	5	39
SeaDataNet-CDI	2		2	2	1	6		5	1		6	2	3	6	3	6	5	50
AnaEE_CREA	2	1	3	1	2	6	3	5	4	2	3		5	4	3	6	3	53
ACTRIS_CLU		2	5	3	5	6	2	6	4	2	2	2	2	3	5	7	6	62
Anaee	2		6	1	5	9	2	5	4	3	5	5		6	5	6	7	71
lw-marine	4		5	1	5	7	2	6		1	6	4	4	7	8	10	4	74
SeaDataNet-Sextant	2		5	2	4	9	1	6	6	6		3	5	5	8	9	6	77
LWERIC_Ecosystem	3	1	5	2	5	9	1	6	7	6	5	4	6		6	9	5	80
ACTRIS_ASC	5	1	13	2		12	2	7	5	1	4	2	5	5	5	9	9	87
ArgoGdac	6	1	7	2	7	10	4		6	5	6	5	5	6	5	11	6	92
eLTER-RI	5	1	7	4	5	9	4	5	8	3	8	3	5	6		12	8	93
SIOS	6	1	11	5	9	11	1	6	4	5	6	3	7	5	8	10		98
ACTRIS_GRES	5	1		3	13	15	2	7	5	2	5	3	6	5	7	11	11	101
ICOS	7	1	11	4	9	14	5	11	10	6	9	6	6	9	12		10	130
IAGOS	6	2	15	4	12		4	10	7	6	9	6	9	9	9	14	11	133



ACTRIS_DVAS		1	2	1	2	1	2	1	1			1	1	1		1	2	2	19
EISCAT	1	3	2	1	2	2	3		3	3	1	1	2	2	1	5	6	2	40
DiSSCo		3	1	2	4	3	6	1	3	8	3	3	2	2		5	6	2	54
ACTRIS-ARES	1	6	4		5	6	6	1	3	2	1	2	2	1	2	3	5	5	55
AnaEE_CREA	1	3	2	1	2	2	5	2	4	5	3	4	7		2	3	7	3	56
ACTRIS_CLU	2	6	5	5		6	7	2	6	4	2	4	3	2	4	5	7	6	76
SeaDataNet-Sextant		5	4	1	2	4	10	1	5	7		6	5	3	3	9	9	6	80
LWERIC_Ecosystem	1	5	6	2	4	4	9	1	6	9	6		7	4	3	7	7	6	87
Anaee	1	7	5	2	3	6	9	2	5	5	5	7		7	2	6	8	8	88
ACTRIS_InSitu	2	8		4	5	7	10	2	6	3	4	6	5	2	1	5	9	12	91
ArgoGdac	1	8	6	3	6	7	10	3		6	5	6	5	4	3	4	12	6	95
ACTRIS_ASC	1	13	7	6	6		12	2	7	6	4	4	6	2	3	6	8	9	102
lw-marine		7	3	2	4	6	9	3	6		7	9	5	5	8	11	13	5	103
eLTER-RI	1	8	5	3	5	6	11	5	4	11	9	7	6	3	5		13	8	110
SIOS	2	11	12	5	6	9	13	2	6	5	6	6	8	3	2	8	12		116
ACTRIS_GRES	1		8	6	6	13	16	3	8	7	5	5	7	3	3	8	14	11	124
IAGOS	2	16	10	6	7	12		3	10	9	10	9	9	5	6	11	19	13	157
ICOS	2	14	9	5	7	8	19	6	12	13	9	7	8	7	6	13		12	157

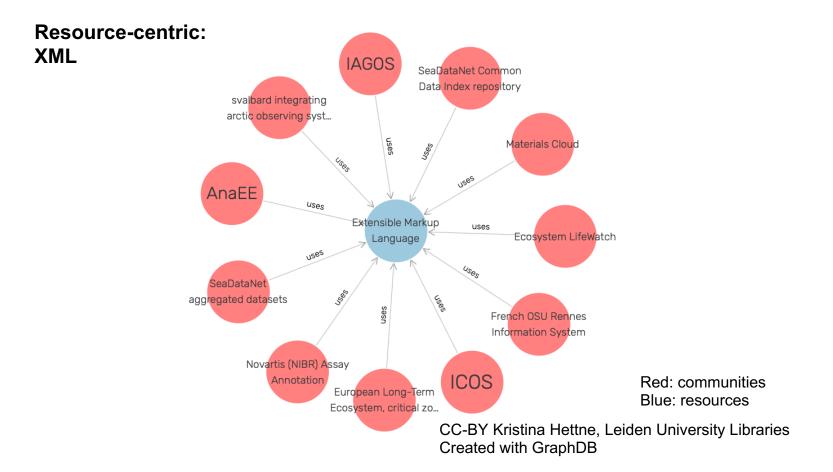


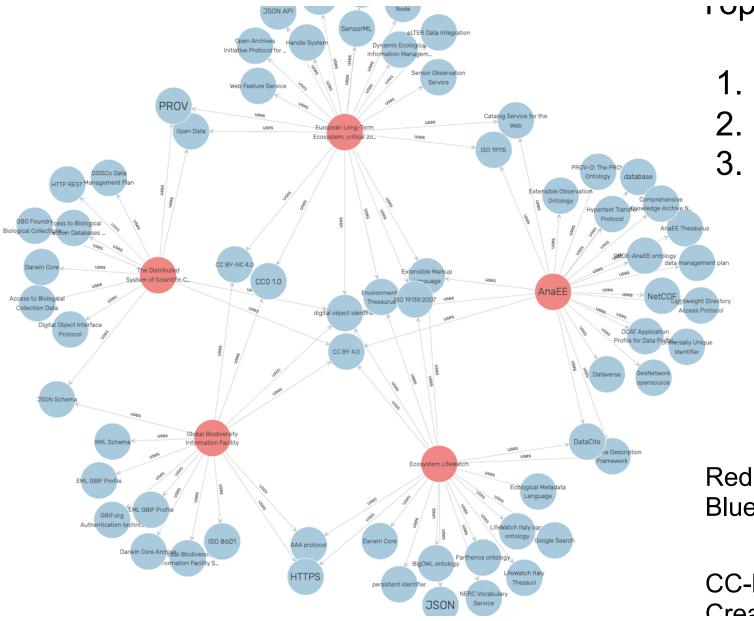
EISCAT	2	4	3	3	3	3	4		5	2	3	3	3	2	2	2	1	1	5	1	7	2	61
DiSSCo	3	5	3	5	2	5	6	1	4	1	9	1	3	4	2	2	1		5	3	7	2	74
SeaDataNet-CDI	2	3	5	2	1	2	7	3	6	4	3		10	2	3	2	4	1	4	7	8	6	85
AnaEE_CREA	4	5	4	4	4	4	5	2	5	4	5	2	5	3	7		4	2	3	5	7	3	87
EPOS-ERIC	3	7	4	6	5	5	7	2	3	3	4	2	4		3	3	1	4	7	4	8	5	90
EMSO	4	5	5	4	4	5	6	2	8		4	4	7	3	4	4	4	1	2	6	7	4	93
DANUBIUS	4	7	5	5	5	6	7	1	6	4	5	4	6	1	6	4		1	3	5	8	6	99
ACTRIS_DVAS		11	11	8	8	11	9	2	6	4	4	2	5	3	7	4	4	3	4	5	7	7	125
Anaee	7	9	7	5	4	8	9	2	6	4	6	3	8	3		7	6	2	6	7	8	8	125
ACTRIS-ARES	8	11	8	8		9	12	3	7	4	5	1	4	5	4	4	5	2	5	5	13	7	130
LWERIC_Ecosystem	5	7	7	6	5	6	10	1	7	6	9	7	9	4	7	5	5	3	6		9	6	130
eLTER-RI	4	9	6	7	5	7	12	5	5	2	10	4	8	7	6	3	3	5		6	12	8	134
lw-marine	4	9	5	6	5	8	10	3	7	4		3	7	4	6	5	5	9	10	9	13	5	137
ACTRIS_CLU	8	13	10		8	12	10	3	8	4	6	2	7	6	5	4	5	5	7	6	10	7	146
ArgoGdac	6	10	8	8	7	9	11	5		8	7	6	10	3	6	5	6	4	5	7	14	6	151
SIOS	7	13	13	7	7	11	13	2	6	4	5	6	9	5	8	3	6	2	8	6	11		152
SeaDataNet-Sextant	5	9	8	7	4	8	12	3	10	7	7	10		4	8	5	6	3	8	9	12	9	154
ACTRIS_InSitu	11	13		10	8	12	13	3	8	5	5	5	8	4	7	4	5	3	6	7	11	13	161
ACTRIS_ASC	11	18	12	12	9		14	3	9	5	8	2	8	5	8	4	6	5	7	6	10	11	173
ACTRIS_GRES	11		13	13	11	18	19	4	10	5	9	3	9	7	9	5	7	5	9	7	16	13	203
IAGOS	9	19	13	10	12	14		4	11	6	10	7	12	7	9	5	7	6	12	10	20	13	216
ICOS	7	16	11	10	13	10	20	7	14	7	13	8	12	8	8	7	8	7	12	9		11	218



Community-centric: OSURIS FIP

CC-BY Kristina Hettne, Leiden University Libraries Created with GraphDB



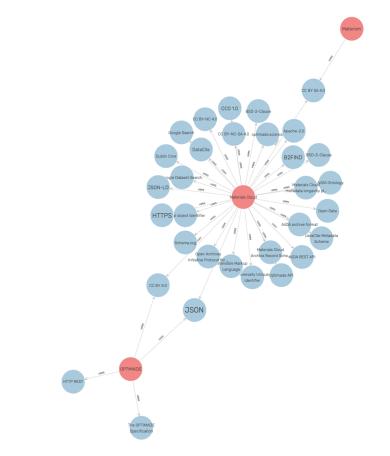


I UP U SHALEU LESUULES

- 1. Digital Object identi
- 2. CC-BY-4.0 (4)
- 3. Extensible Markup

Red: communities Blue: resources

CC-BY Kristina Hettne, Leider



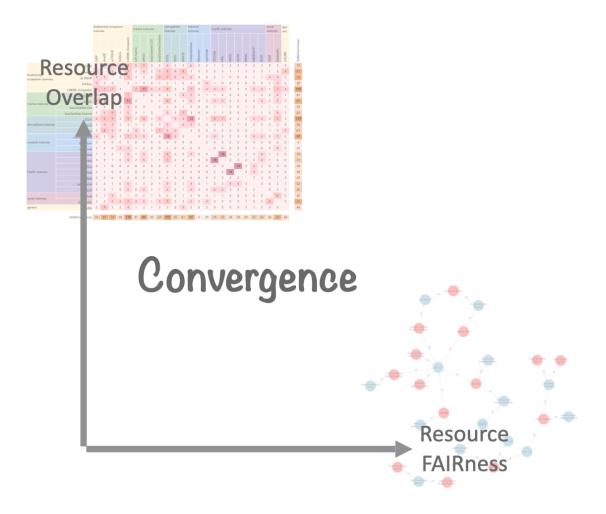
Material sciences

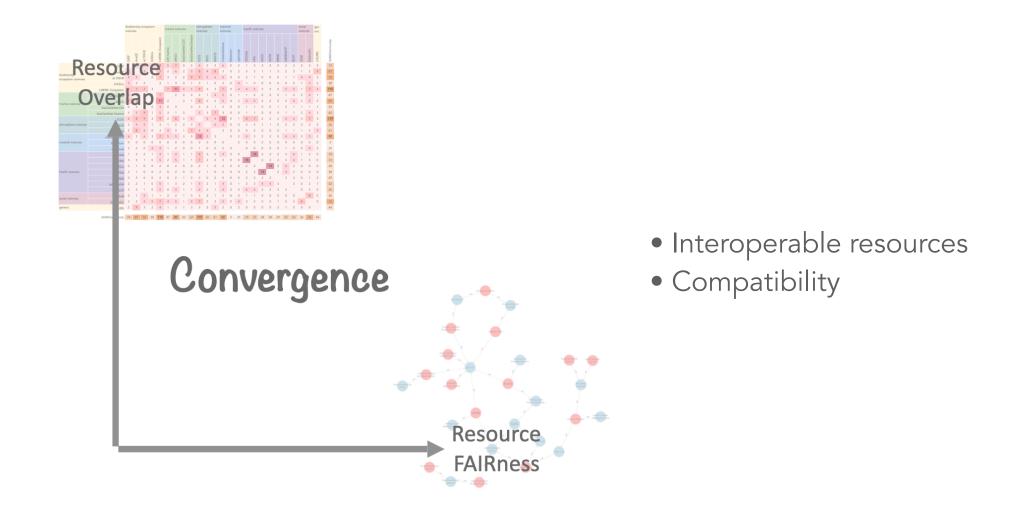
Top 3 shared resources:

- 1. JSON (2)
- 2. CC-BY-4.0 (2)
 3. CC-BY-SA-4.0 (2)

Red: communities Blue: resources

CC-BY Kristina Hettne, Leiden University Libraries Created with GraphDB







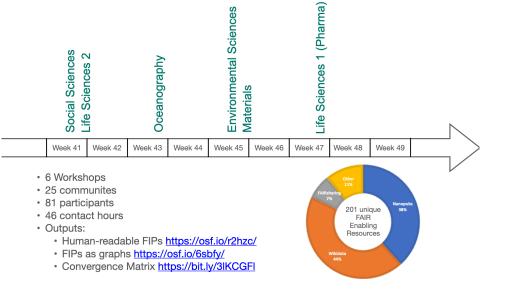
Outlook



Report of Pre-symposium Workshops: Creating FAIR Implementation Profiles and the Convergence Matrix

Session https://conference.codata.org/FAIRconvergence2020/sessions/258/ Date: Nov. 30, 2020









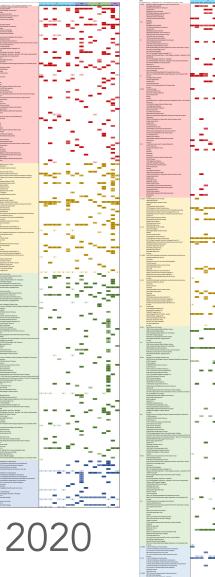


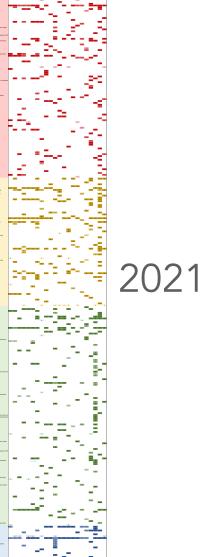












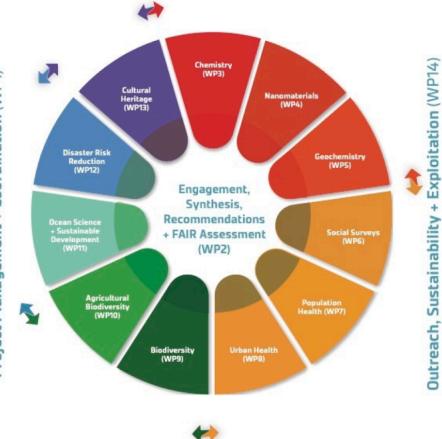


• Launching June 1

- 1st round of FIPs between 1 June and September 31
- Report out on the FIPs in the FAIR Convergence Symposium

Europe Commi		English ∃ N Register Login
SEARCH FUND	DING & TENDERS Y HOW TO PARTICIPATE Y PROJECTS & RESULTS	WORK AS AN EXPERT SUPPORT -
Global cooper	ation on FAIR data policy and practice	
TOPIC ID: HORIZO	DN-WIDERA-2021-ERA-01-41	
Grant		
General information	General information	
Topic description	Programme	
Destination	Horizon Europe Framework Programme (HORIZON)	
Conditions and documents	European Research Area (HORIZON-WIDERA-2021-ERA-01)	
Submission service		
Topic related	Closed	
FAQ	Type of action	Type of MGA
Get support	HORIZON-CSA HORIZON Coordination and Support Actions	HORIZON Action Grant Budget- Based [HORIZON-AG]

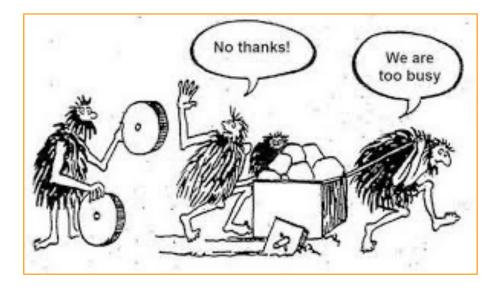
Project Management + Coordination (WP1)





Wheel Meetings





- 1. Present 'wheels' (in essence any FAIR enabling resource) developed in a particular community
- 2. Get feedback on the current version from other communities
- 3. Explore the potential for re-use outside of the original community
- 4. Publish in a FAIR environment the FER with transparent community endorsement (and formal 'badges') and preserve recordings on a public website for later wheel meeting editions and reference.





LEIDEN2022 **European City of Science**



FIP & Practice Working Group

FIPP Aim - achieve critical mass of stakeholders with declared commitment to FAIR & FDOs by October 2022.

FIPP Aim - engage FDO Forum experts on FIPs as "metadata" in FDO typing. Come to a definitive conclusion by October 2022.

Recent meeting with FDO Forum February 15, 2022 https://osf.io/jyc6u/