



Australian Research Data Commons

Interoperable

#FAIR101 #ARDCtraining Webinar 5

PRESENTED BY

Matthias Liffers

Code of Conduct

To ensure that everyone has a fulfilling learning opportunity, FAIR Data 101 is governed by a Code of Conduct.

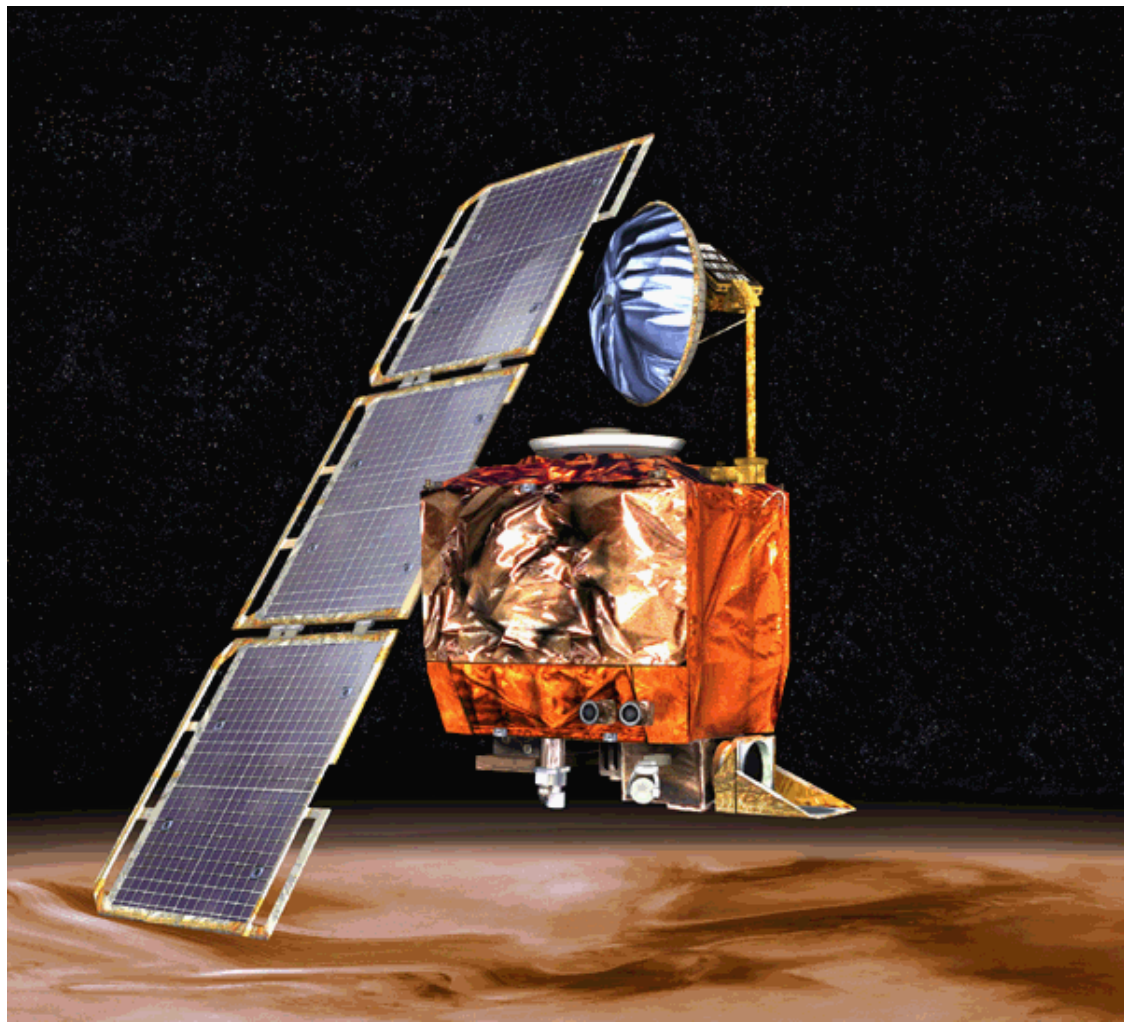
You can view the Code at tiny.cc/code-conduct

If you observe a breach of the Code of Conduct, please contact us using the form linked in the Code.

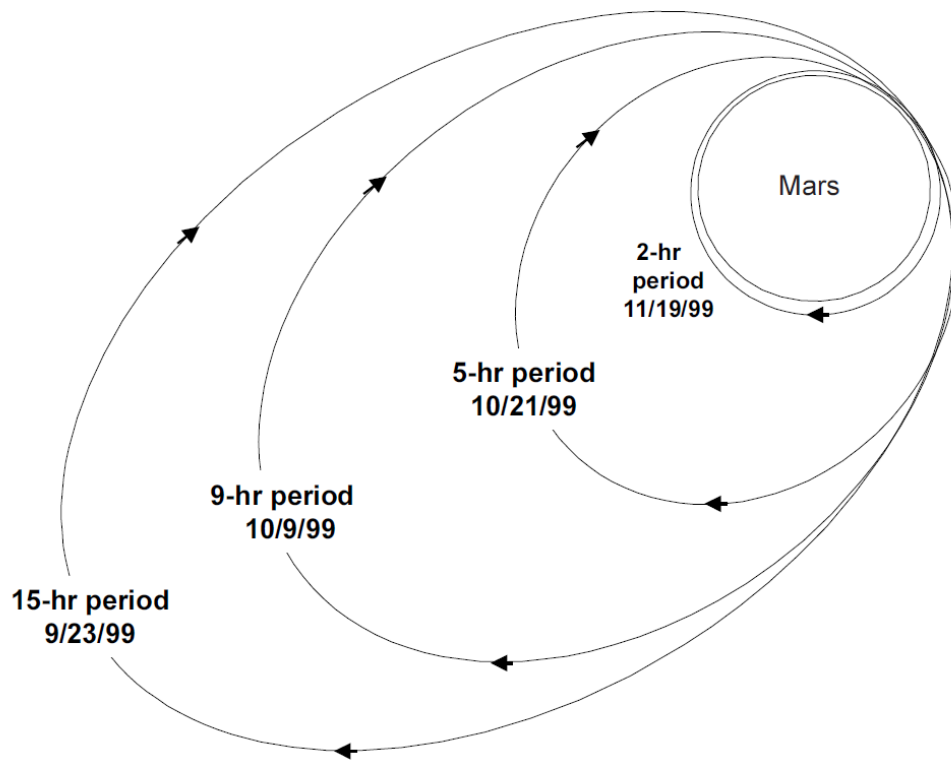
Today's agenda

- Interoperability
 - I1, I2
- Problems with few solutions

What's the most expensive mistake you've made?



Mars Climate Orbiter



Aerobraking orbits

When you *assume*

I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

Date	Temp
01/01/2020	191
02/01/2020	195
03/01/2020	200
04/01/2020	195
05/01/2020	196
06/01/2020	180

Date (DD/MM/YYYY)	Temp (Kelvin)
01/01/2020	191
02/01/2020	195
03/01/2020	200
04/01/2020	195
05/01/2020	196
06/01/2020	180

“Creating bespoke parsers, in all computer languages, for all data-types and all analytical tools that require those data-types, is not a sustainable activity.”

Wilkinson et al.

So, tell me about yourself.

Speed dataing?

Determine rather than *assume*



Data Documentation Initiative

Network Common Data Format

AODN Portal

"The gateway to Australian marine and climate science data"

[Get Ocean Data Now](#)

Web Services

The AODN utilise a set of Web Services to integrate its web based applications.

The following are the Web Services used by the AODN –

[GoGoDuck Aggregator](#)

[GeoNetwork](#)

[OAI-PMH](#)

[OGC Catalog Service for the Web \(CSW\)](#)

[OGC Web Coverage Service \(WCS\)](#)

[OGC Web Feature Service \(WFS\)](#)

[OGC Web Map Service \(WMS\)](#)

[OPeNDAP and THREDDS](#)

[ncUrlList Service](#)

[Amazon Web Services \(AWS\)-Batch](#)

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[Introduction to downloading IMOS data directly from servers](#)

Contact Us

For data requests and for further information please contact us at :
info@aodn.org.au

The problem with self-describing data

Old but also new

Not as straightforward as a spreadsheet

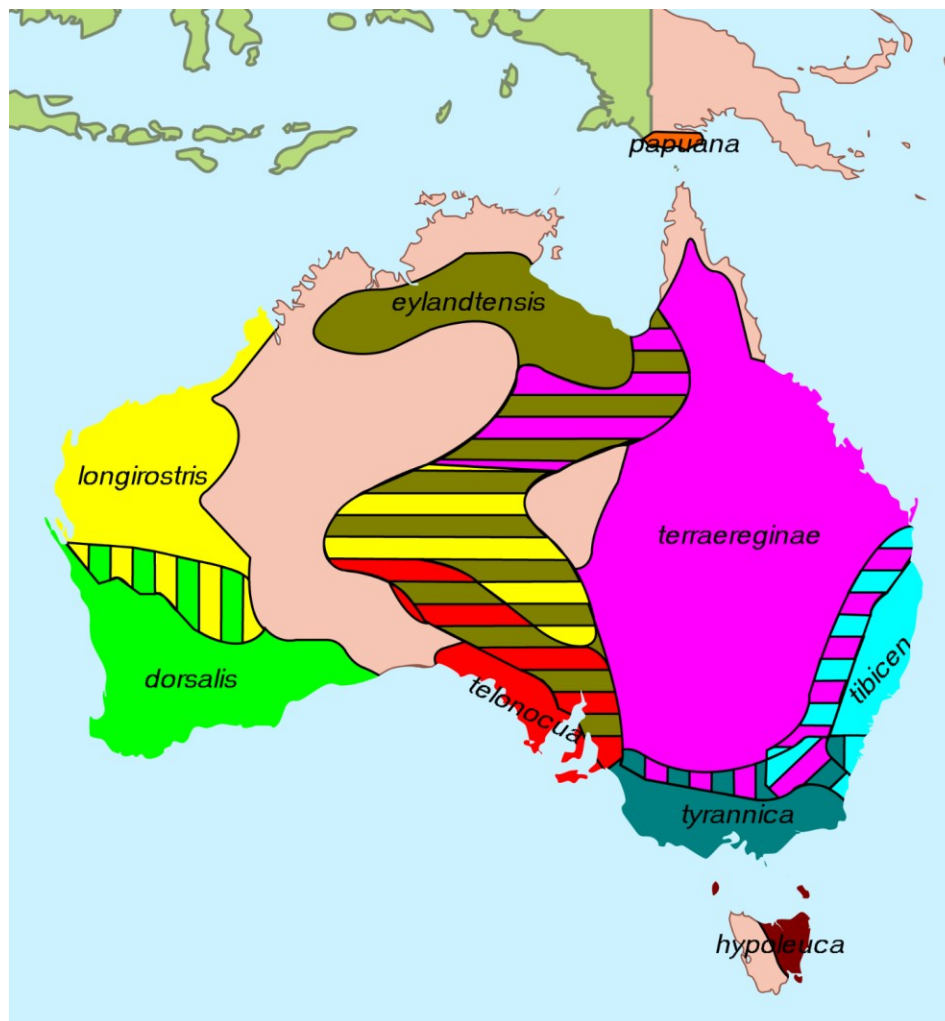
I2: (Meta)data use vocabularies that follow the FAIR principles

Date (DD/MM/YYYY)	Species	Number
01/01/2020	Magpie	1
02/01/2020	Magpie	2
03/01/2020	Magpie	3
04/01/2020	Magpie	2
05/01/2020	Magpie	1
06/01/2020	Magpie	2



Adrian Pingstone (Arpingstone), Public Domain

Date (DD/MM/YYYY)	Species	Number
01/01/2020	Gymnorhina tibicen	1
02/01/2020	Gymnorhina tibicen	2
03/01/2020	Gymnorhina tibicen	3
04/01/2020	Gymnorhina tibicen	2
05/01/2020	Gymnorhina tibicen	1
06/01/2020	Gymnorhina tibicen	2



I3: (Meta)data include qualified references to other (meta)data

Subject *predicate* Object

Matthias *isEmployedBy* ARDC

ARDC *employs* Matthias

ARDC *employs* Liz

Matthias *worksWith* Liz

Liz *worksWith* Matthias

Date (DD/MM/YYYY)	Species	Number
01/01/2020	Gymnorhina tibicen	1
02/01/2020	Gymnorhina tibicen	2
03/01/2020	Gymnorhina tibicen	3
04/01/2020	Gymnorhina tibicen	2
05/01/2020	Gymnorhina tibicen	1
06/01/2020	Gymnorhina tibicen	2

Observation *isOf* Bird

Taxon identifiers

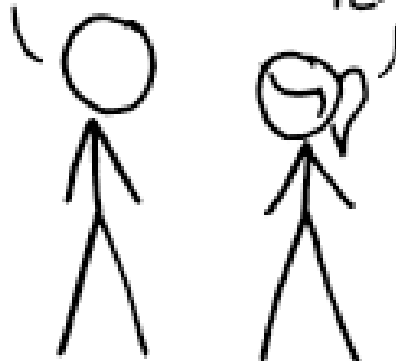
Wikidata: [Q1140949](#) • Wikispecies: [Gymnorhina tibicen](#) • ADW: [Gymnorhina_tibicen](#) • Avibase: [3CE2F51F02451B42](#) • BirdLife: [22706288](#) • BirdLife-Australia: [australian-magpie](#) • BOLD: [53130](#) • eBird: [ausmag2](#) • Fossilworks: [369366](#) • GBIF: [2489450](#) • GISD: [1349](#) • iNaturalist: [8575](#) • IRMNG: [11080053](#) • ITIS: [560338](#) • IUCN: [22706288](#) • NBN: [NHMSYS0020788960](#) • NCBI: [9132](#) • NZBO: [australian-magpie](#) • NZOR: [4deb9d68-8371-4a53-bbcc-9b2c204fd6bd](#) • TSA: [7824](#)

HOW STANDARDS PROLIFERATE:

(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)

SITUATION:
THERE ARE
14 COMPETING
STANDARDS.

14?! RIDICULOUS!
WE NEED TO DEVELOP
ONE UNIVERSAL STANDARD
THAT COVERS EVERYONE'S
USE CASES.



SOON:

SITUATION:
THERE ARE
15 COMPETING
STANDARDS.

“Linked Open Data (LOD) is Linked Data which is released under an open license, which does not impede its reuse for free.”

Tim Berners-Lee

What's next?

Interoperability part 2 with Liz Stokes

- Wednesday 12:00 AWST / 13:30 ACST / 14:00 AEST



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