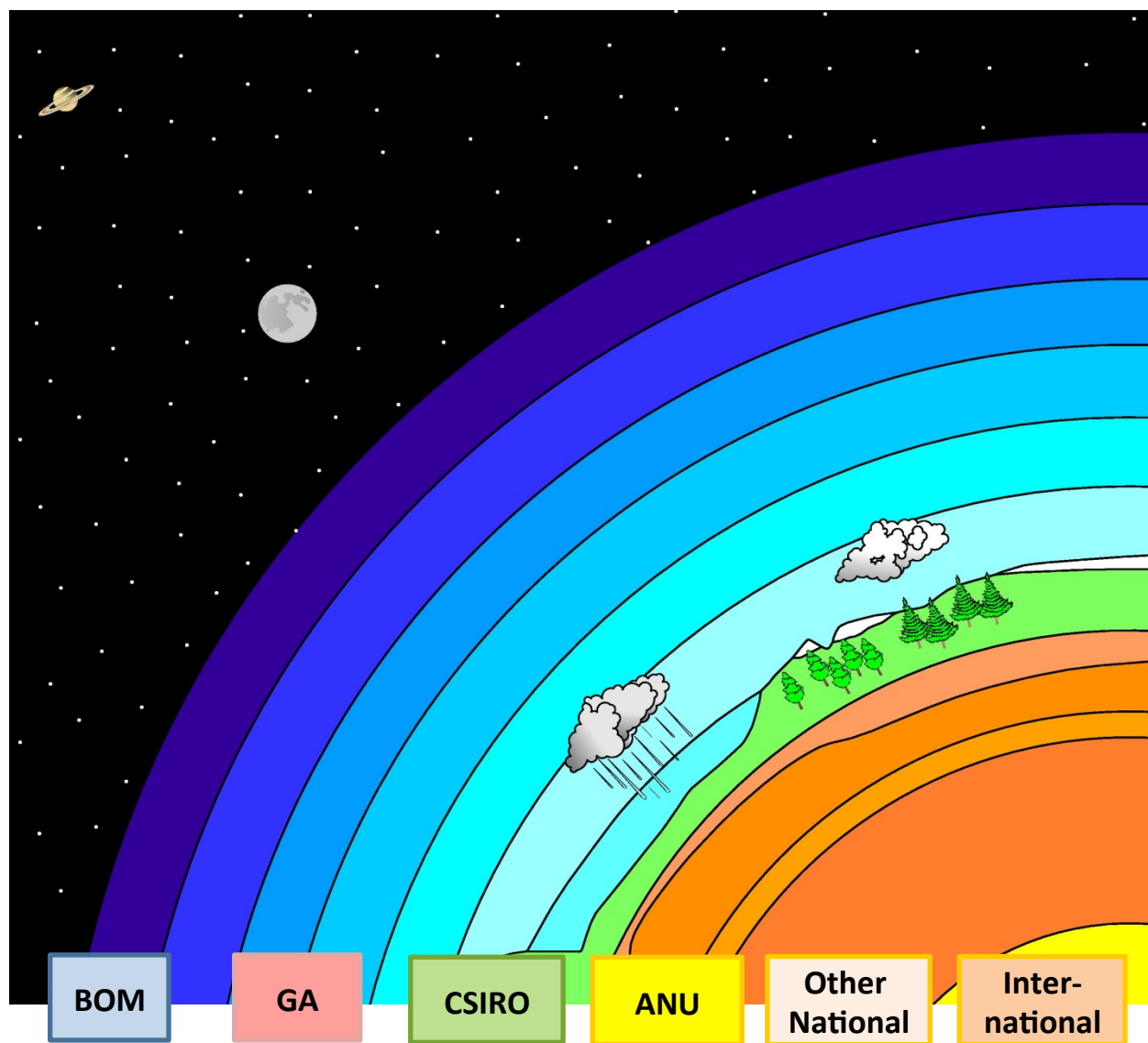




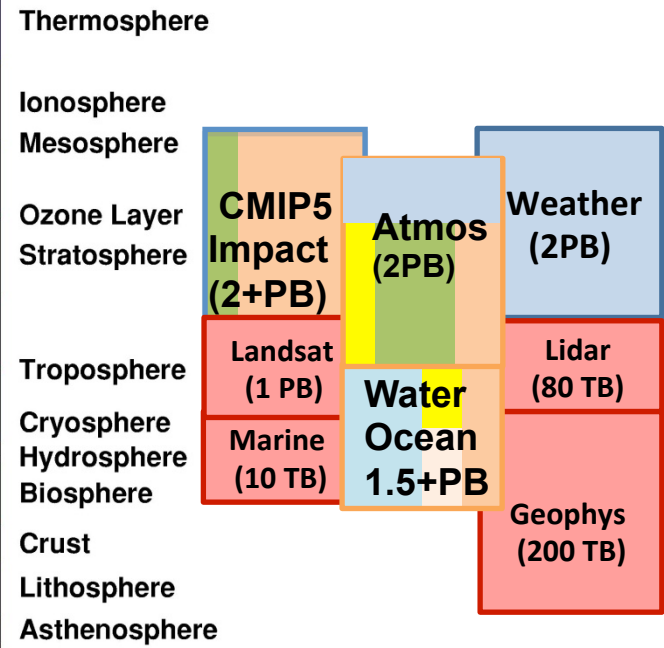
NATIONAL COMPUTATIONAL INFRASTRUCTURE

NCI Environmental Data Collections, Management and Services Overview

Ben Evans
29 October 2014
OzEWEX workshop



**Astronomy
(Optical)
550TB**



- Individual collections on line by 2015
 - Integrated platform is work in progress
- c/- Evans and Wyborn

National Environment Research Data Collections (NERDC)

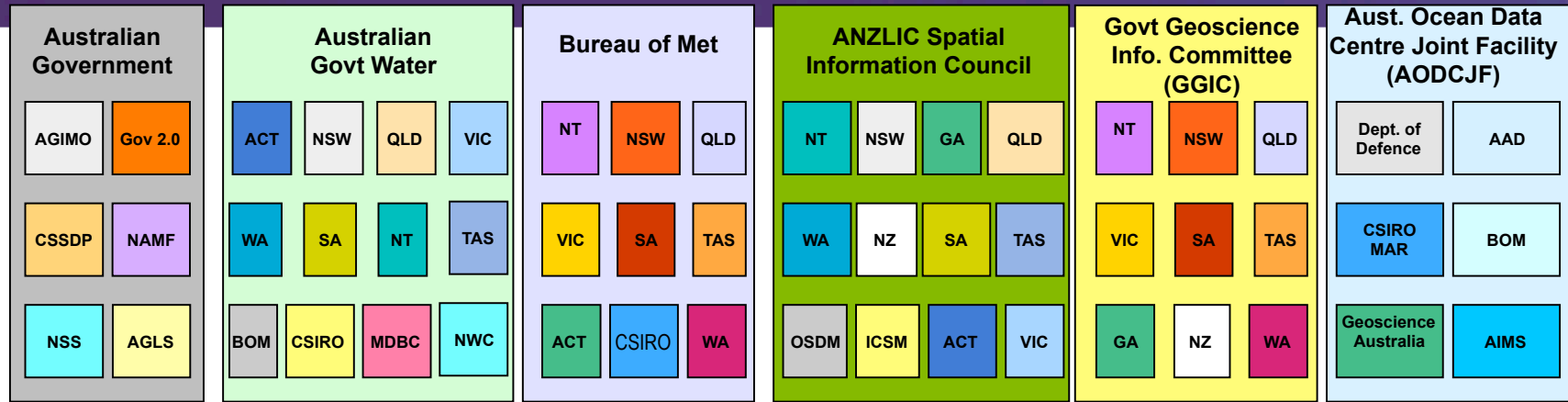
1. Climate/ESS Model Assets and Data Products
2. Earth and Marine Observations and Data Products
3. Geoscience Collections
4. Terrestrial Ecosystems Collections
5. Water Management and Hydrology Collections

Data Collections	Approx. Capacity
CMIP5, CORDEX	~2 Pbytes
ACCESS products	2.5 Pbytes
LANDSAT, MODIS, VIIRS, AVHRR, INSAR, MERIS	1.2 Pbytes
Digital Elevation, Bathymetry, Onshore Geophysics	700 Tbytes
Seasonal Climate	700 Tbytes
Bureau of Meteorology Observations	350 Tbytes
Bureau of Meteorology Ocean-Marine	350 Tbytes
Terrestrial Ecosystem	290 Tbytes
Reanalysis products	100 Tbytes

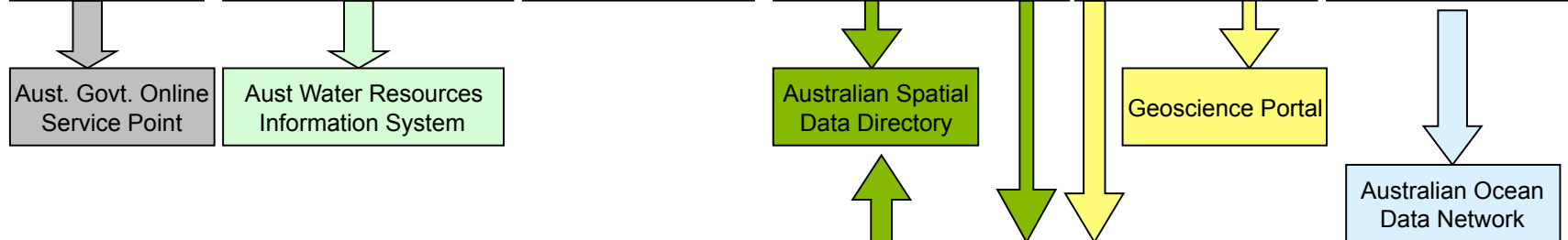
Broader Perspective



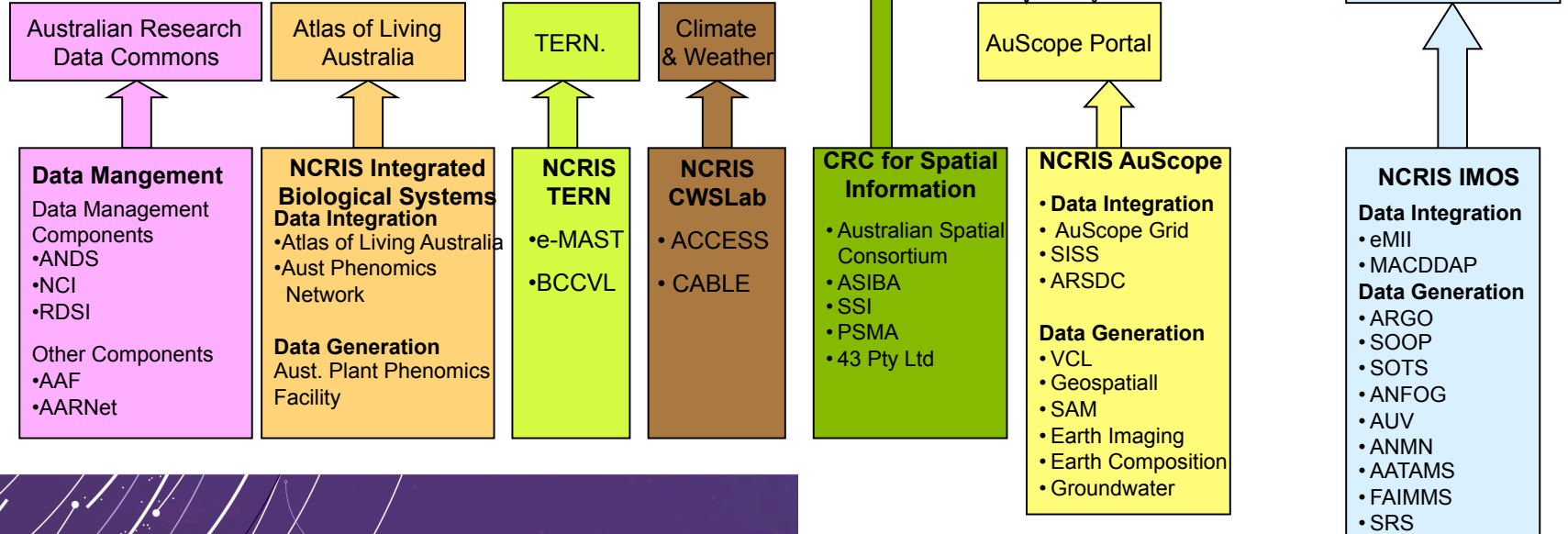
Government Operational



Portals and Access



Research & Development



Three Tier Data Management Oversight:

- Data Management Allocation Committee:
 - Chair: Prof. Robin Stanton. ANU, Bureau, CSIRO, GA representation, Advisor from Panel
 - Role: Allocation management, Data Collection sign-off
 - Reports to the NCI board
- Data Management Panel:
 - Chair: Dr Ben Evans, partner and key stakeholder reps
 - Role: Allocation review against criteria, scientific oversight and usability, planning
- Technical advisory, data management
 - Convenor: Dr Ben Evans
 - Role: Technical advisory, data management advisory, Key data management contacts

Data Management Plan for each data collections and datasets:

Governance	Roles & Responsibilities	Licensing
Reporting	Versioning	Dataset/Product descriptions
Release workflow	Provenance	Curation
Link to Services catalogue	User Consultation	Communications
Capacity management	Sustainability	Documentation
Support

All the necessary work so that users can work with confidence and clarity

DOIs and Registries to be National and Internationally discoverable



NCI

Data Collection Management Traffic light to progress access

Collection	NCI Code	Organisations involved in core data management	Data Management Plan	license readme	Directory structure finalized	Data Replication /Population	Data quality assurance	Local Filesystem access with NCI account for data managers	Local Filesystem access with NCI account for users	DOI and metadata catalogue	Data Services	Legend
Skymapper (Astronomy)	p12	ANU	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Open	not started
Australian Data Archive (Social Sciences)	d10, m26	ANU	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Controlled access	in progress
BPA Melanoma Dataset (Biosciences)	u86	ANU	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Controlled access	in progress
Plant Phenomics (Biosciences)	rq4	CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Controlled access	in progress
CAT: other												
Ocean Gen. Circulation Model (Earth Simulator)		CoECCS	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Controlled access	in progress
Year Of Tropical Convection	rq7	CoECCS	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Controlled access	in progress
CABLE Global Evaluation Datasets	wd9	CSIRO, CoECCS, UNSW	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Purpose metadata catalogue system	Controlled access	in progress
CORDEX Int	rq8	UNSW	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Coupled Model Intercomparison Project (CMIP5)	ua6	NCI, CSIRO, BoM	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Reanalysis	ua4	BoM, CoECCS	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
ACCESS Models	rr4	BoM, CSIRO, CoECCS	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Seasonal Climate Prediction	rr8	BoM	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
CAT: Climate/ESS Model Assets/Products												
Australian Bathymetry reference data	rr1	GA, IMOS	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Australian Marine Video and Imagery Collection	fk1	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Global Navigation Satellite System (GNSS) (Geodesy)	fj5	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
TERN AusCover	rr3	CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
AVHRR (Radiometry)	rq9	CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Digital Elevation	rq6	GA, ANU, CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Digitised Australian Aerial Survey Photography	fk2	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Earth Observation (Satellite: Landsat, etc)	v10	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
MODIS+CSIRO Satellite Products	u39	CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Satellite Soil Moisture Products	fj4	CSIRO, TERN eMAST	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
VIIRS (Infrared Radiometry)	rq0	CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Synthetic Aperture Radar	fj7	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
BoM Observations	rr5	BoM	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
BoM Ocean-Marine Collections	rr6	BoM	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
CAT: Earth/Marine Obs/Products												
Aust. 3D Geological Models	fj9	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Aust. Geophysical Data Collection	rr2	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Aust. Natural Hazards Archive	fj6	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
National CT-Lab Tomographic Collection	w09	ANU	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
CAT: Geosciences												
TERN eMAST	xa5	TERN eMAST	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
TERN Phenology Monitoring: Near Surface Remote Sensing	fj3	ANU, TERN, CSIRO	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
TERN eMAST Data Assimilation	fj2	TERN eMAST	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
CAT: Terrestrial Ecosystem												
CSIRO/BoM Key Water Assets	fj8	CSIRO, BoM, GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
Models of Land/Water Dynamics from Space	fk4	GA	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Interim Purpose metadata catalogue system	Controlled access	in progress
CAT: Water Management, Hydrology												





Instructions can be found at <https://datamgt.nci.org.au>

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Research Data Collection

Return to : [Home](#) [Dashboard](#) [User Profile](#)

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- ▶ GA Profile
- ▶ AusCover Profile
- ▶ eMAST Profile
- ▶ Admin
- ▶ Documentation

Search Metadata

Documentation

[Upload Help Docs](#)

General Documents

- [data_validation_rules.pdf](#)
- [Data Management Workflow part I - Pre-Ingest procedures.pdf](#)
- [Data Management Workflow part II - Data Replication Options.docx](#)
- [Data Management Workflow part III - Post-Ingest Backup on Tapes.docx](#)



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Ben Evans, OzEWEX 29 October, 2014

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Data Management Plan

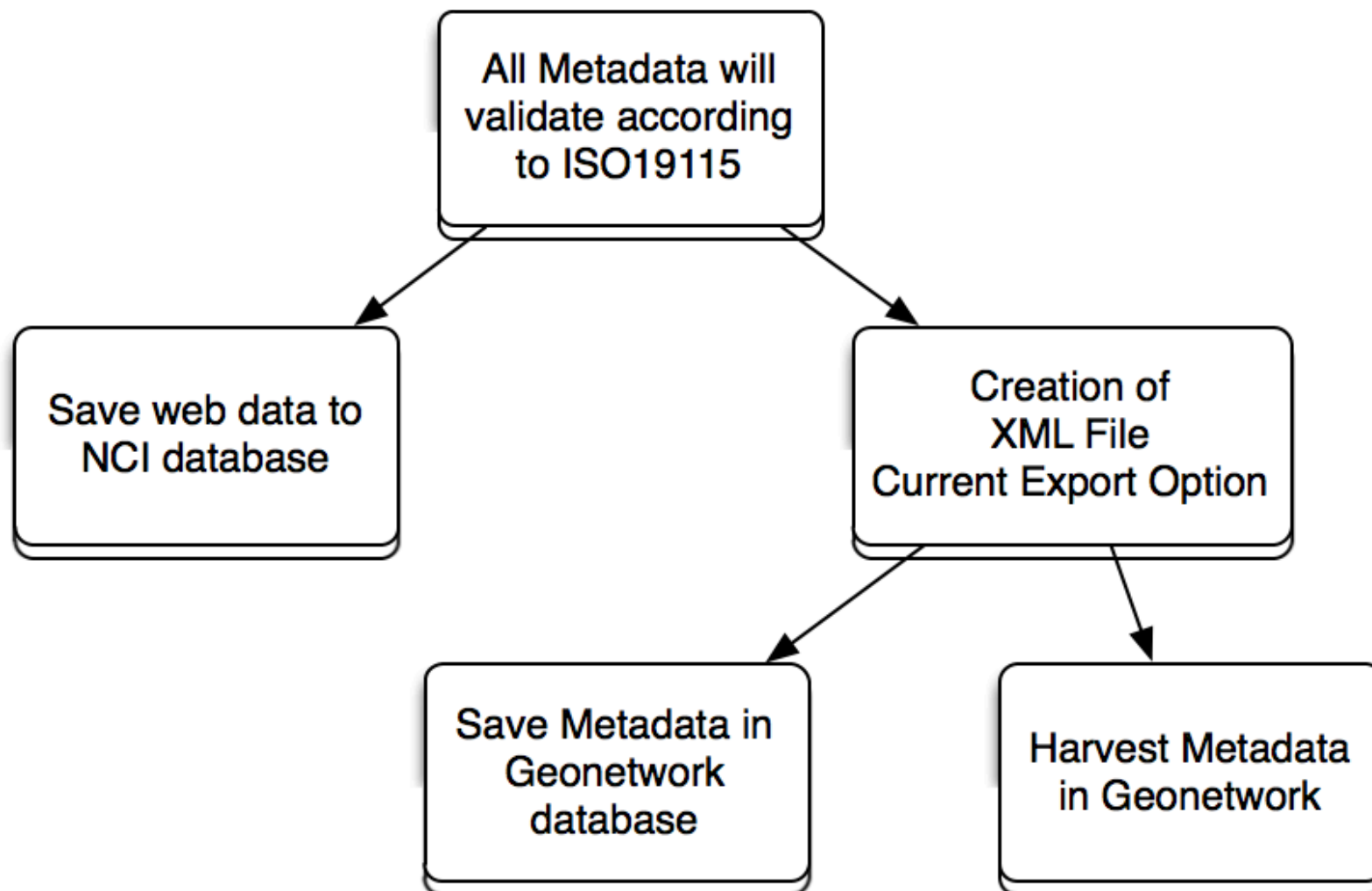
Saved Plans

1. OFES Re-analysis dataset	rq5	Download a copy
2. Year Of Tropical Convection (YOTC) re-analysis	rq7	Download a copy
3. The National CT-Laboratory data collection.	h85	Download a copy
4. BPA Melanoma dataset	u86	Download a copy
5. CORDEX AustralAsia	rq8	Download a copy

Note: Fields marked with * are required

	Data Collection Description
Data Collection Title	CORDEX AustralAsia *
NCI Data Collection Code*	rq8 *
Scientific Merit/Abstract	<p>The World Climate Research Programme (WCRP) is backing an international initiative called the COordinated Regional climate Downscaling EXperiment (CORDEX). The goal of the initiative is to provide regionally downscaled climate projections for most land regions of the globe, as a complement to the global climate model projections performed within the fifth Coupled Model Intercomparison Project (CMIP5).</p> <p>CORDEX-AustralAsia includes data from both dynamical and statistical downscaling over Australia and the surrounding regions. The data covers the period from 1950-2100 and is designed for use within climate change impacts and adaptation studies. It is expected that many scientific publications will be produced using the data and will cite the dataset.</p> <p>CORDEX is an ongoing initiative that will continue to grow in both data contributions and use over the next several years. CORDEX data is being distributed through the Earth System Grid Framework (ESGF).</p>
Data Ownership and Custodianship	Data will be owned by the data producers (modelling groups) in a manner similar to the CMIP5 data. *
Data Collection Background/History	This is the first globally coordinated regional scale climate change projection experiment. *
Dataset Purpose	The goal of the initiative is to provide regionally downscaled climate projections for most land regions of the globe, as a complement to the global climate model projections performed within the fifth Coupled Model Intercomparison Project (CMIP5). It is designed to produce data for use within climate change impacts and adaptation studies. *
Dataset Status	ongoing *





ANDS is a member of the International Registration Agency called DataCite and so can offer DataCite DOI services.

The Cite My Data service [...] allow[s] registered [trusted] clients to mint, update & retrieve ANDS Digital Object Identifiers (DOIs) that identify research data.

ANDS does not manage Digital Object Identifiers;

ANDS only provides the infrastructure that allows minting and updating of Digital Object Identifiers in the global DOI infrastructure. Updating is the responsibility of the client that minted the DOI.

Processes and policies need to be put in place by those utilising the product to ensure that appropriate maintenance practices underpin persistence.

Users of the service are expected to have automated methods to both mint and update identifiers

[The] service does not include a GUI interface.

Geonetwork is the technology for the master catalogue of NCI data.

Geonetwork is being used for both spatial and non-spatial data. For non-spatial data, will use the spatial and temporal fields for relevant information (eg location where collection was made and over what time period the collection took place).

The catalogue will maintain both information on web services as well as direct access (non-web services, and filesystems).

NCI Catalogue for Users of NCI accessing data that may need to access data/ services hosted remotely still to be addressed...

Standards...

	Model	Current	Future
Geospatial data	UML	19115:2003	19115-1:2014
Geospatial data – imagery	UML	19115-2	
Geospatial Services	UML	19119:2005	
Encoding of 19115/19119	XML	19139:2007	
Catalogue Service for Web (CSW)	OGC web service	2.0.2	

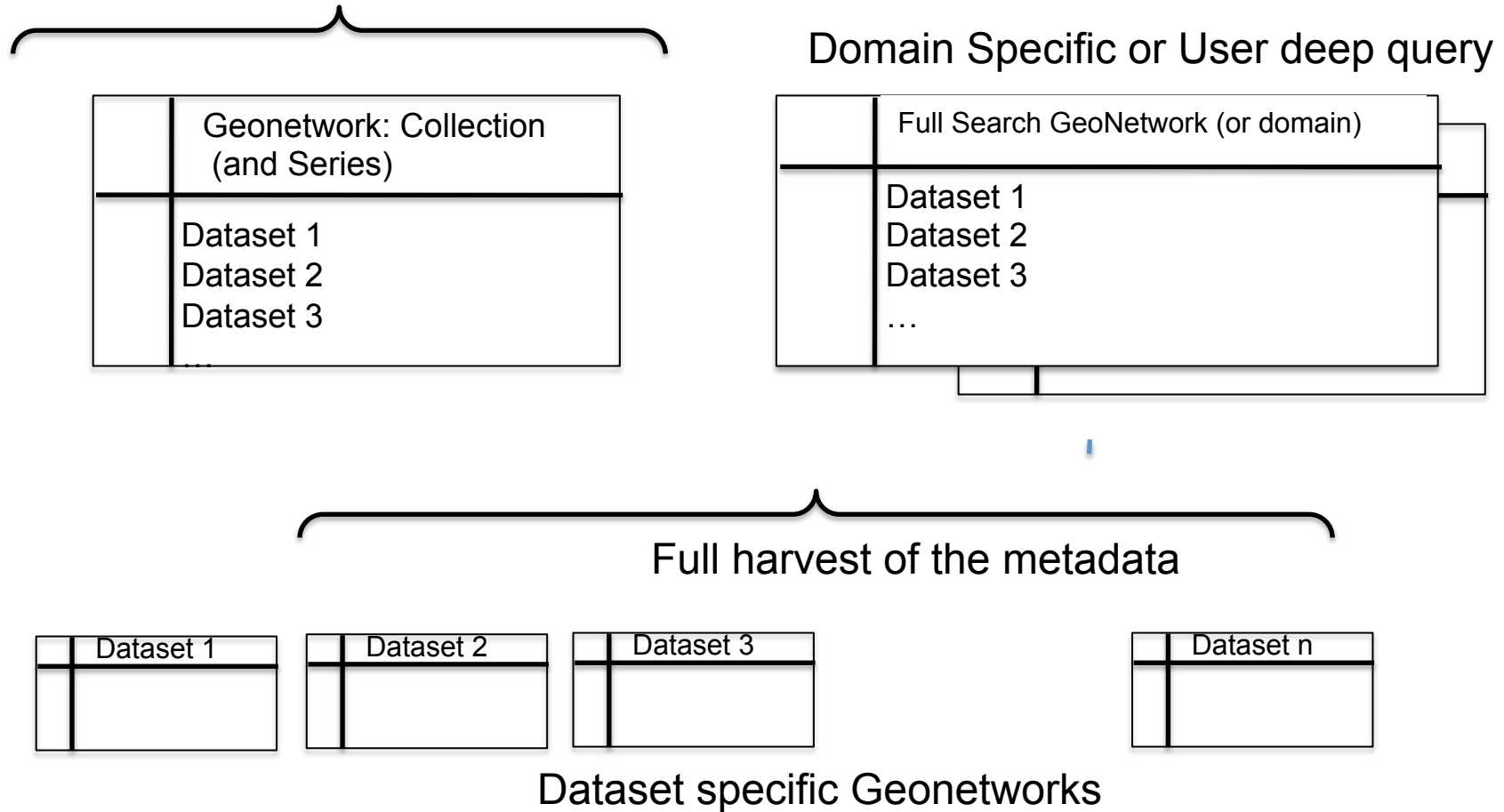
T. Mackey, NCI Data Citation and Catalogues Workshop, August 2014

ISO19115/19139 model in levels:

1. Data collection – eg Climate and Weather modelling
2. Series – eg. Landsat 7
3. Datasets – Useful bundles of files
4. Attributes – inc variables

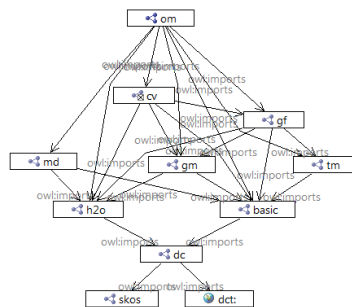
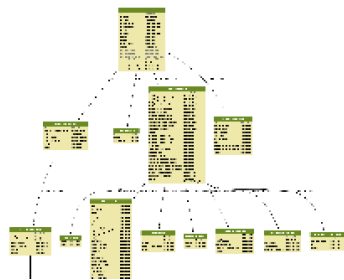
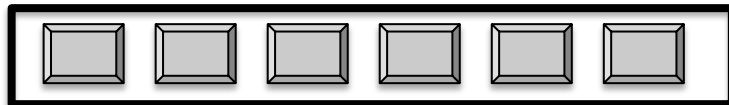
NCI GeoNetwork architecture

CSW Harvesting and Cross-walks (eg RIF-CS Adapter)



	GeoNetwork catalogue

Lucene database



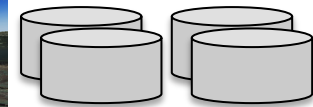
Supercomputer access



Virtual lab




DAP, OGC, ... Services



DataSet	Variables											
	tos						sos	thetaoga	so	soga	...	
	historical	piControl	rcp26	rcp45	rcp60	rcp85						
ACCESS1-0												
ACCESS1-3												
BCC-CSM1.1												
BNU-ESM1												
...												

- GeoNetwork with typical search parameters used as keywords
- Keywords which can be searched include model name, experiment, frequency, variable, rip scenario

geonetwork.nci.org.au – collection-dataseries level



 Geographic data sharing for everyone

Home | Contact us | Links | About | Help |

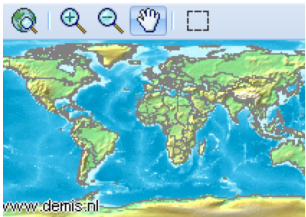
 English ▼

Username Password Login

Simple Search | Advanced Search
Show map

WHAT?

WHERE?



www.demis.nl


- Any -

Search

Reset
Options

- Applications
- Audio/Video
- Case studies, best practices
- Conference proceedings
- Datasets
- Directories
- Interactive resources
- Maps & graphics
- Other information resources
- Photo
- Physical Samples
- Registers
- Z3950 Servers

Show map



Abstract

Keywords

Schema

Extent

Metadata

MODELS OF LAND AND WATER DYNAMICS FROM SPACE DATA COLLECTION


The Water Observations from Space (WOfS) sub-project of the National Flood Risk Information Portal project has systematically analysed every cloud free Landsat pixel observed between 1998 and 2012. T...

Physical Geography and Environmental Geoscience

iso19139

111 -45 155 -10 1987-01-01 2013-12-31

No preview available



Abstract

Keywords

Schema

Extent

Metadata

DIGITAL ELEVATION DATA OF AUSTRALIA


Digital Elevation Model (DEM) data which is used to describe Australia landforms and seabed is crucial for addressing issues relating to the impacts of climate change, disaster management, water secu...

Physical Geography and Environmental Geoscience, Digital Elevation, National Location

iso19139

114 -42 154 -11 1990-01-01 now

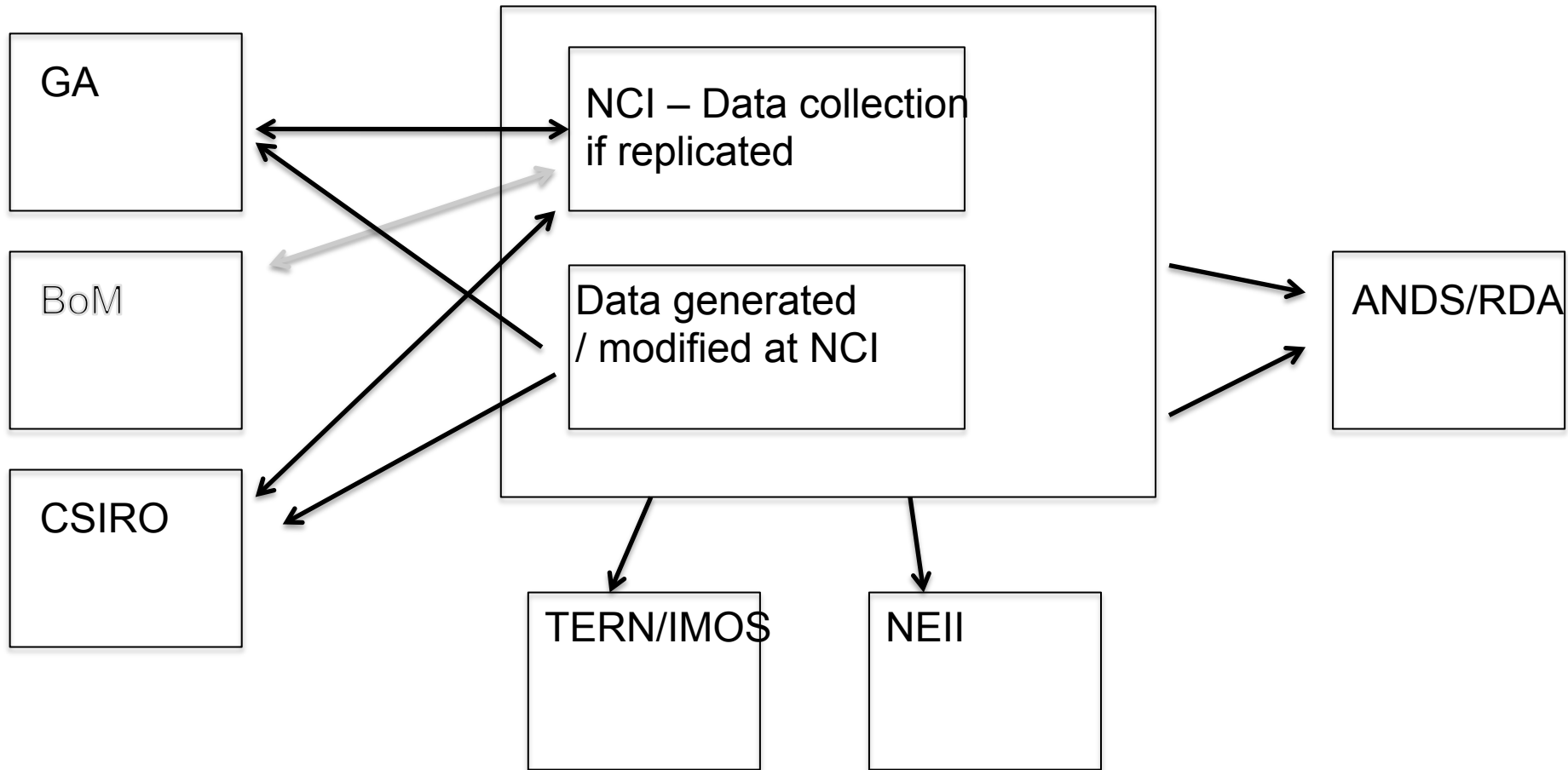
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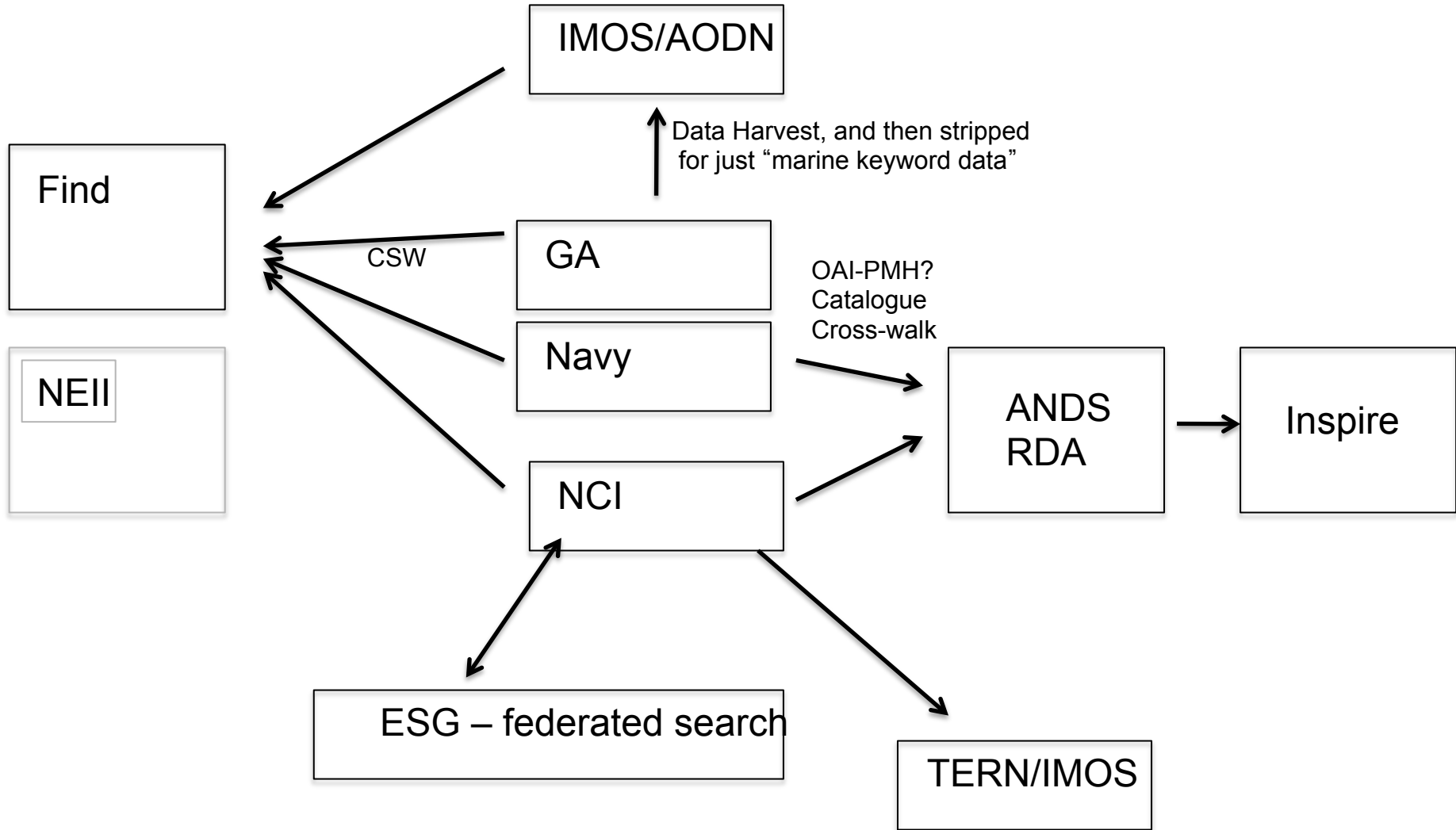
GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) DATA ARCHIVE

No preview available

GeoNetwork Harvesting at the collection level/dataset level for partners/stakeholders?



GeoNetwork harvesting



We have analyzed the NCI collections from a few aspects:

Data source

Data ownership

Versioning - Dynamic data type

Granularity

DataCite schema

} Who?

} How?

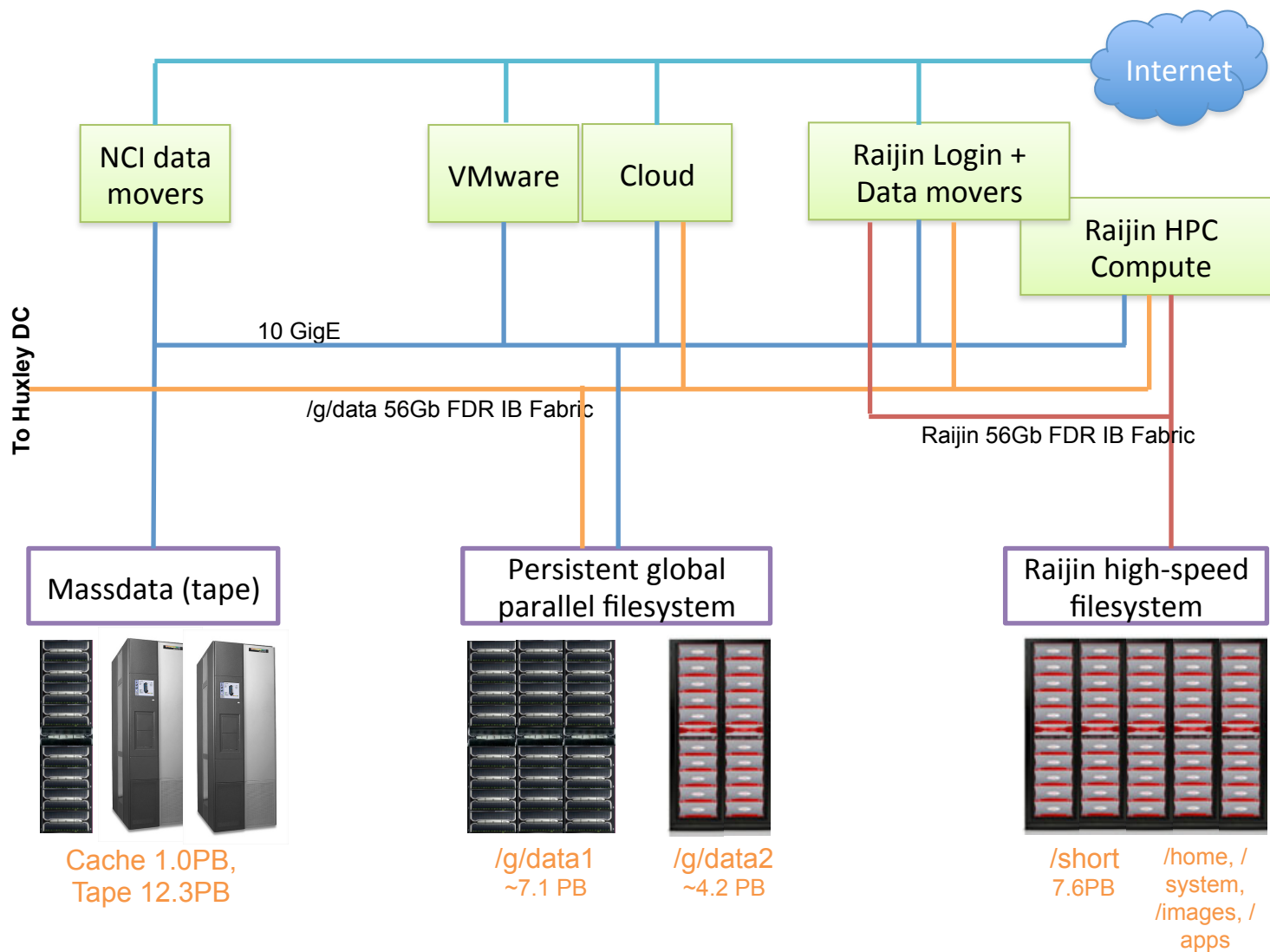
What?

Character Matrix for each collection – mapping the characteristics to prepare for proper DOI and catalogue entries (in progress)

Name	Data sources			Data Source Ownership			Dynamic				Services	DOI		Referencing
	one-to-one replication from an Australia agency	International replication or outsourced	referencing input data collections	Joint owned data by multiple agencies with joint responsibility	Personal owned data with a centralized agency management and responsibilities	Aggregation of the data with multi-modal collection	data from sensors (time series)	data from models	data with errata	Purely dynamic data	software version changes	Collection level	Finer grain level "DOI"	eg produce derived products on NCI's HPC/HPD platform
01 - Skymapper -ANU														
02 - Plant Phenomics CSIRO														
03 - Australian Data Archive (ANU)														
04 - BPA Melanoma Dataset (ANU)														
05 - Seismic and Infrasound at WARAMANGA (RDSI-Dev)														
05 - CMIP5														
06 - OFES CoECSS														
07 - Year Of Tropical Convection														
08 - CORDEX Int														
09 - ACCESS														
10- Reanalysis														
11 - Seasonal Climate														
12 - CABLE Global Evaluation Datasets														
13 - TERN AusCover														
14 - MODIS+CSIRO Satellite Products														
15 - Earth Observation														
16 - VIIRS CSIRO														



NCI's integrated high-performance environment



Raijin:

- 57,472 cores (Intel Xeon Sandy Bridge technology, 2.6 GHz) in 3592 compute nodes;
- 160 TBytes (approx.) of main memory;
- Infiniband FDR interconnect; and
- 10 PBytes (approx.) of usable fast filesystem (for short-term scratch space).
- 1.5 MW power; 100 tonnes of water in cooling



Partner Cloud

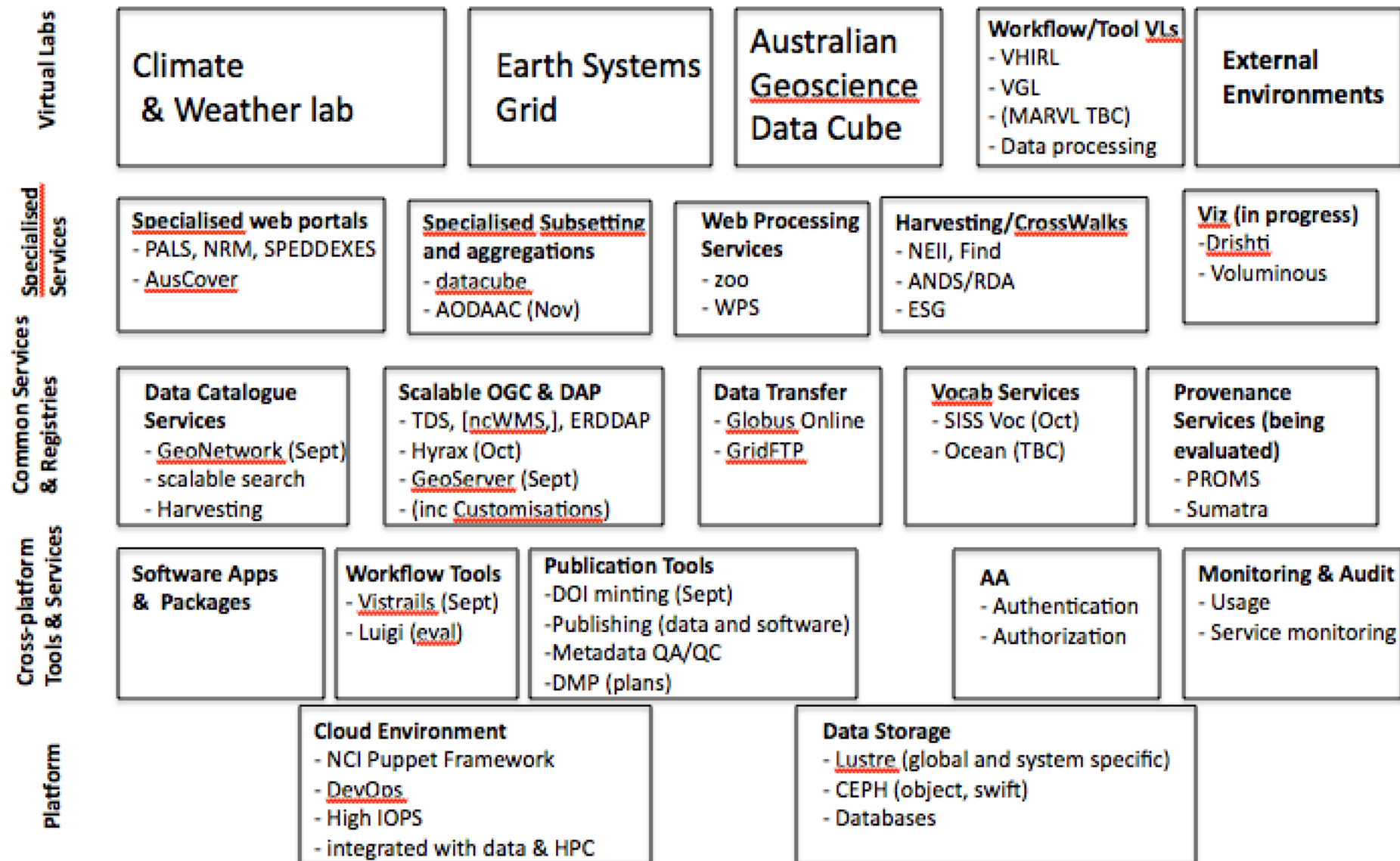
- Same generation of technology as raijin (Intel Xeon Sandy Bridge technology, 2.6 GHz) but only 1500 cores;
- Infiniband FDR interconnect;
- Collaborative platform for services and
- The platform for hosting non-batch services



NCI Nectar Cloud

- Same generation as partner cloud
- Non-managed environment
- Weak integration



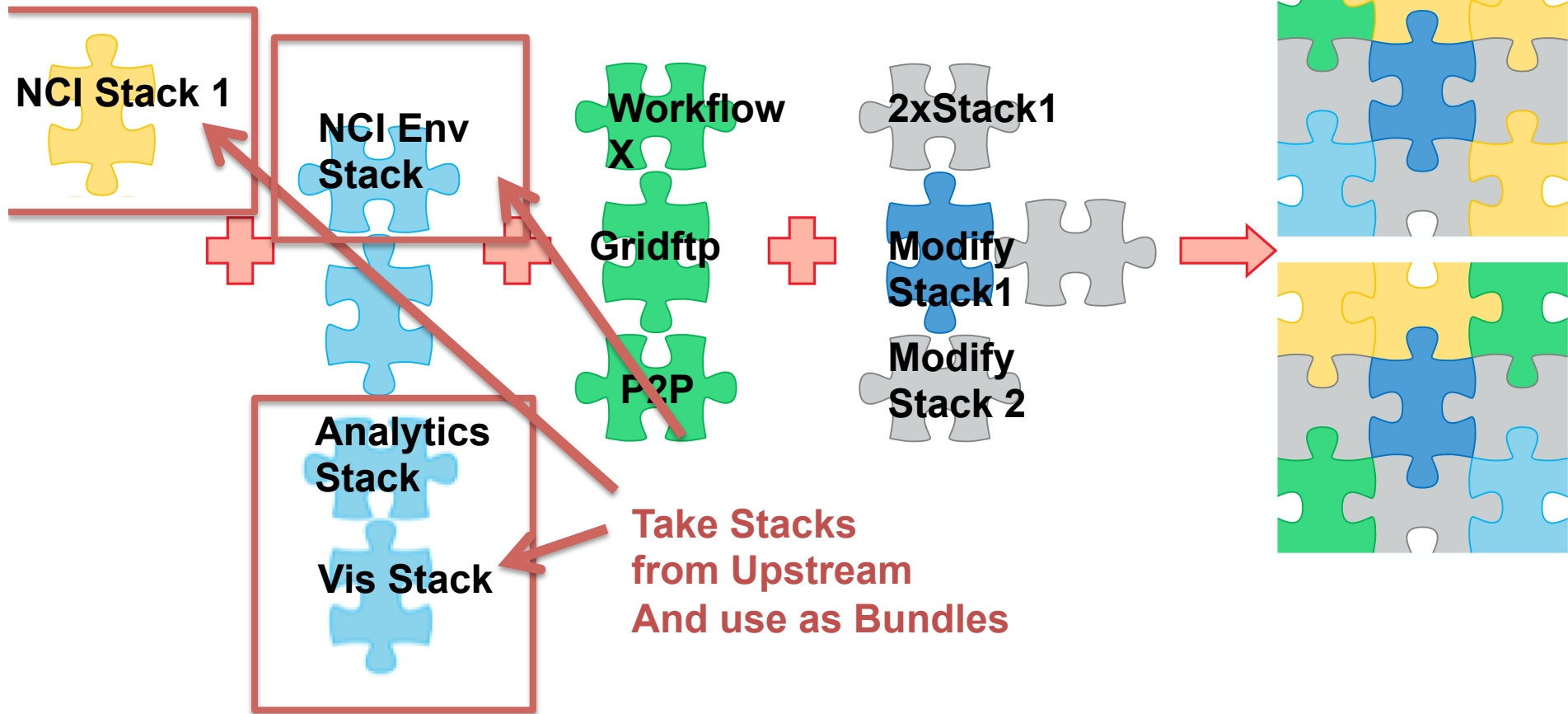


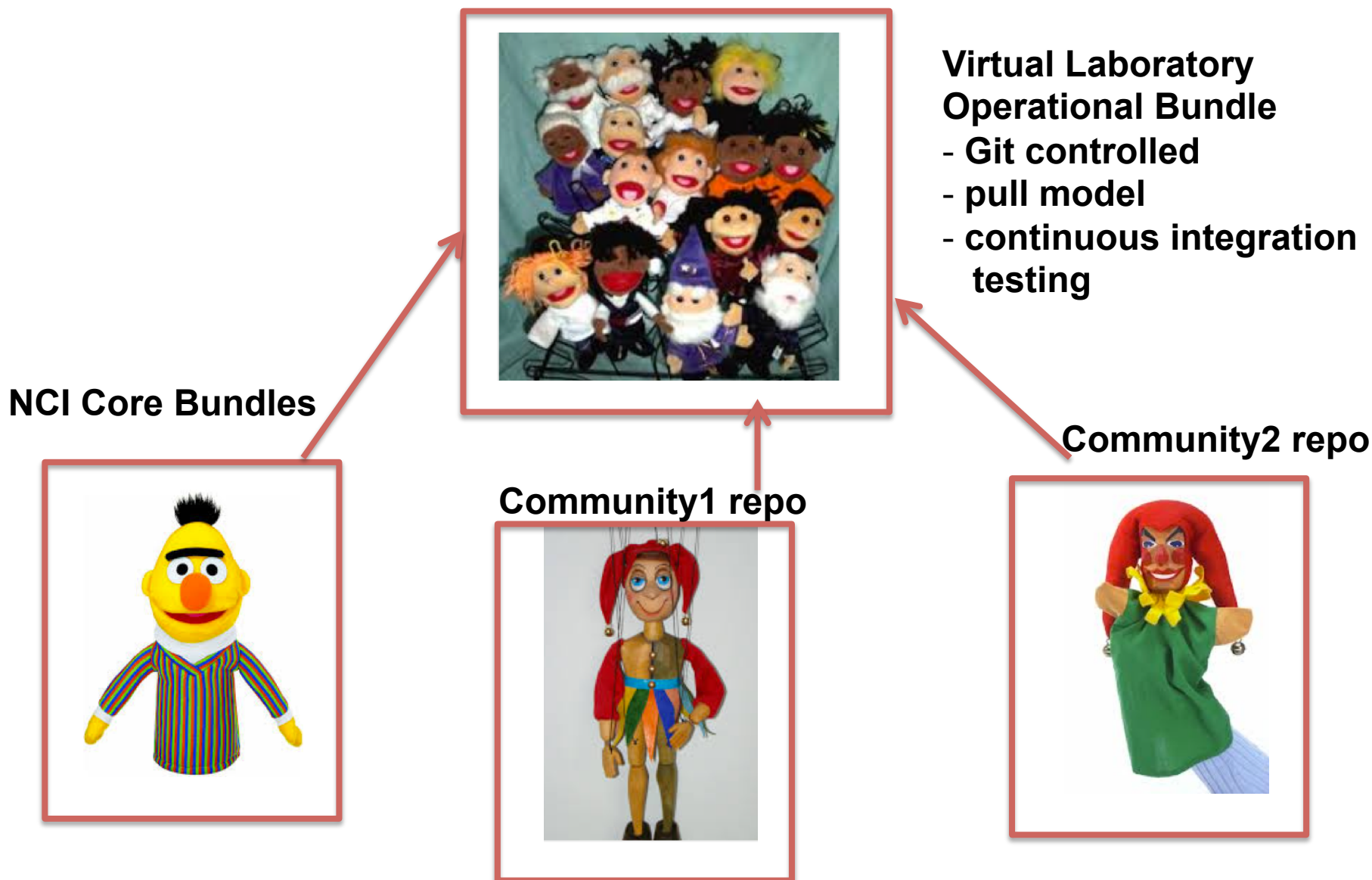
The rise of Virtual Laboratories

- Provide a community driven approach to scientific computing
- Built using
 - advanced High Performance/Data Intensive infrastructure
 - Reliable services and data – sometimes remote, information systems
 - Tools and Workflows
- Leverages/Integrates large national and international investments in large scale community projects (Software Stacks)
- Flexible connectivity between software stacks

Can solve the challenge of establishing trusted results needed for scientific rigor.

Basic OS functions + Common Modules + Bespoke Services + Special config choices → Super Software Stack







NCI

Embedded managed data analysis platform and service



SPEDEXES Prototype - Mozilla Firefox

Bluelink http://...exes/ OPeNDAP D... Aggregatin... eMAST / SP... Use the SSH... SPEDEX... CSS - Bootst... http://...t=json \$.jqplot.Ma...

127.0.0.1/projects/speddexes/index.html

SPEDDEXES

Search: [reset]
temperature

Datasets:

- The distribution pattern of monthly daily minimum temperature (aus mth tmax v0 0 197001)
- Aus mth tmax v0 0 yearlv ->

Variables:
Monthly daily maximum temp

Available Processes:

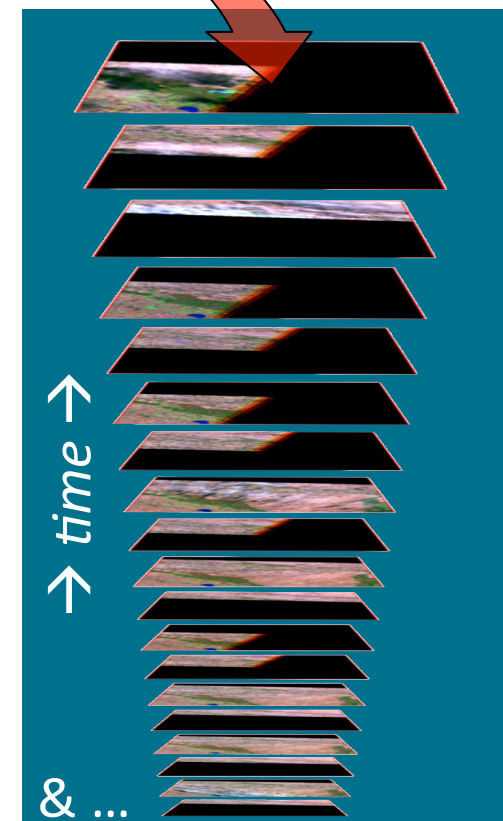
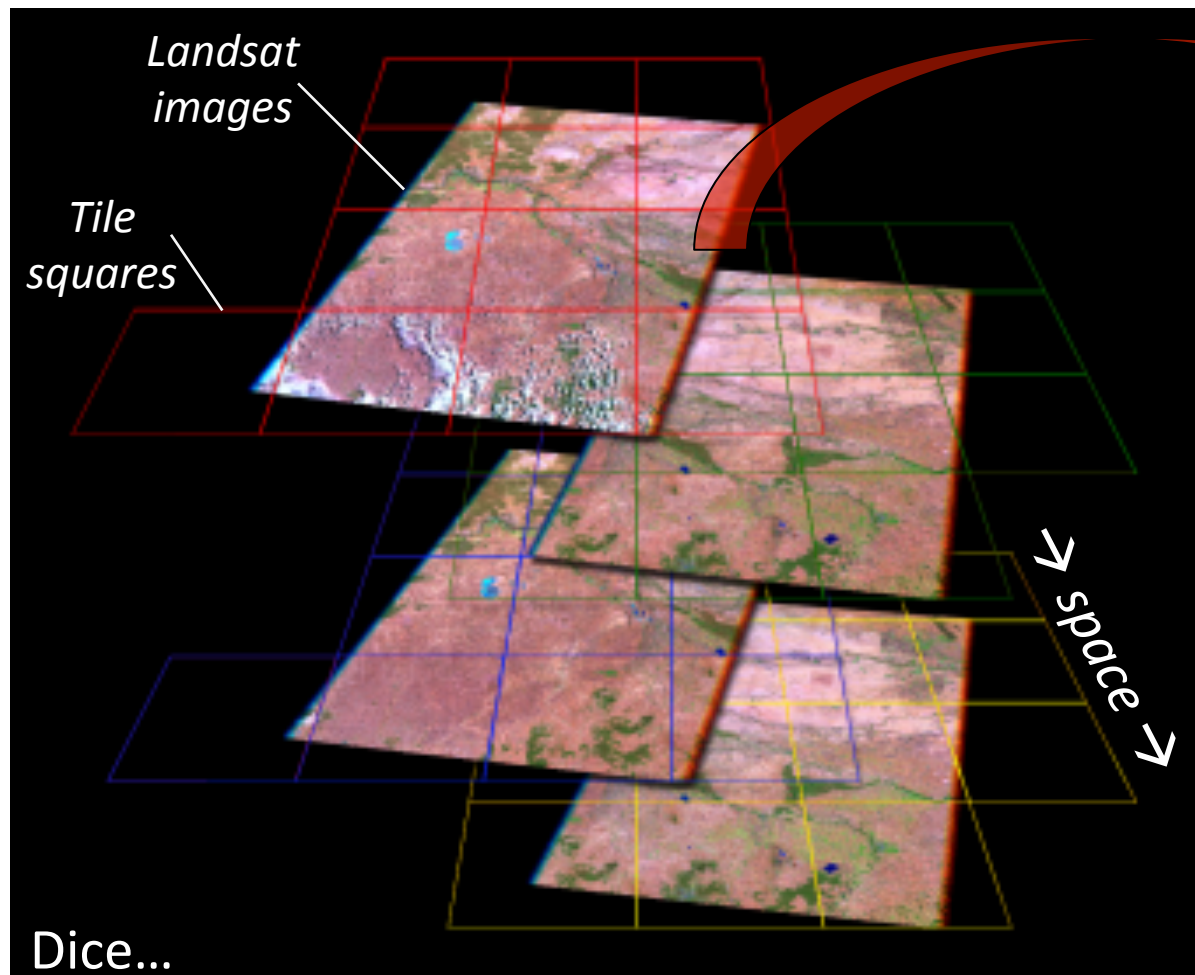
- GetFeatureInfo
- Plot timeseries

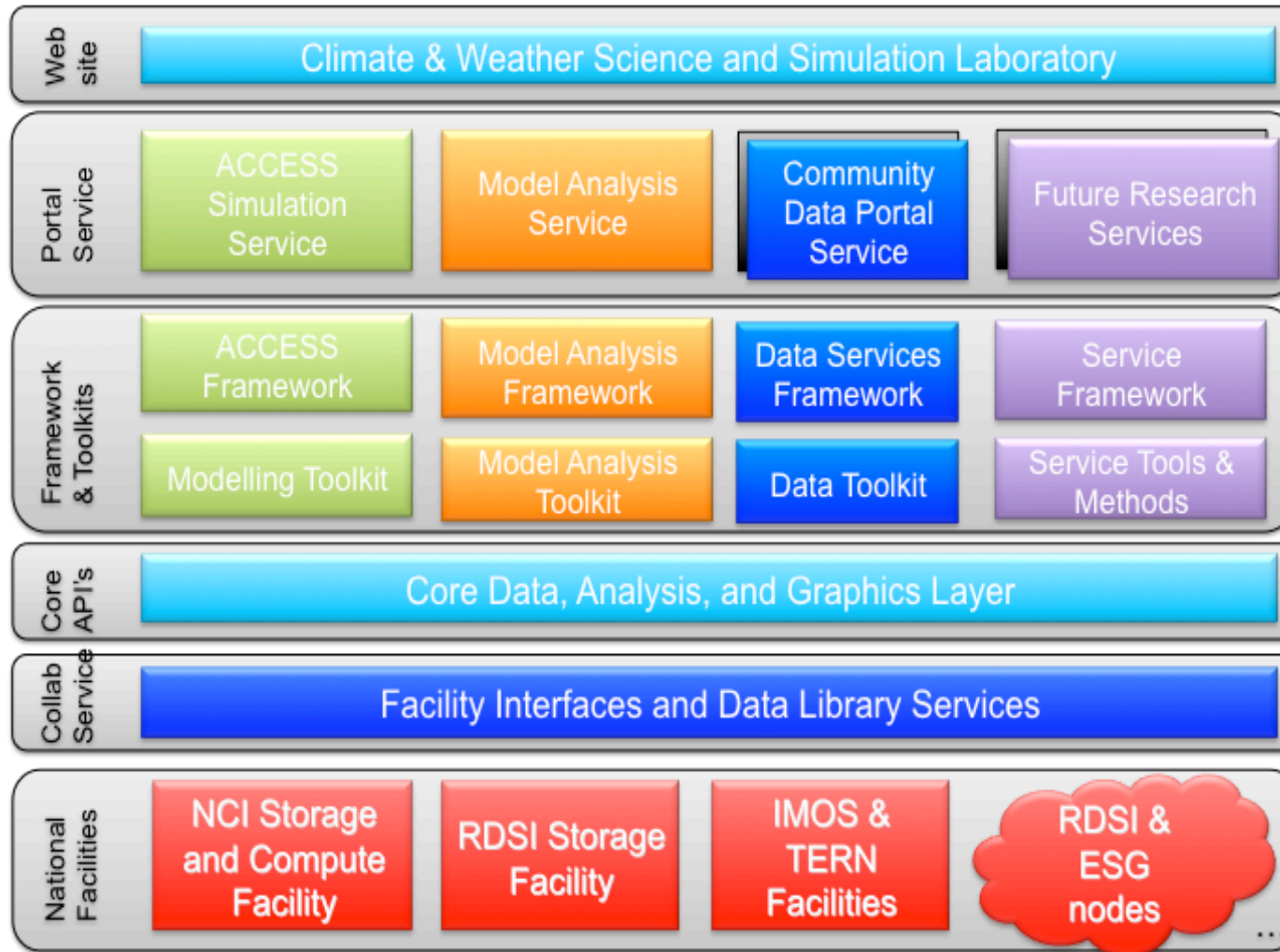


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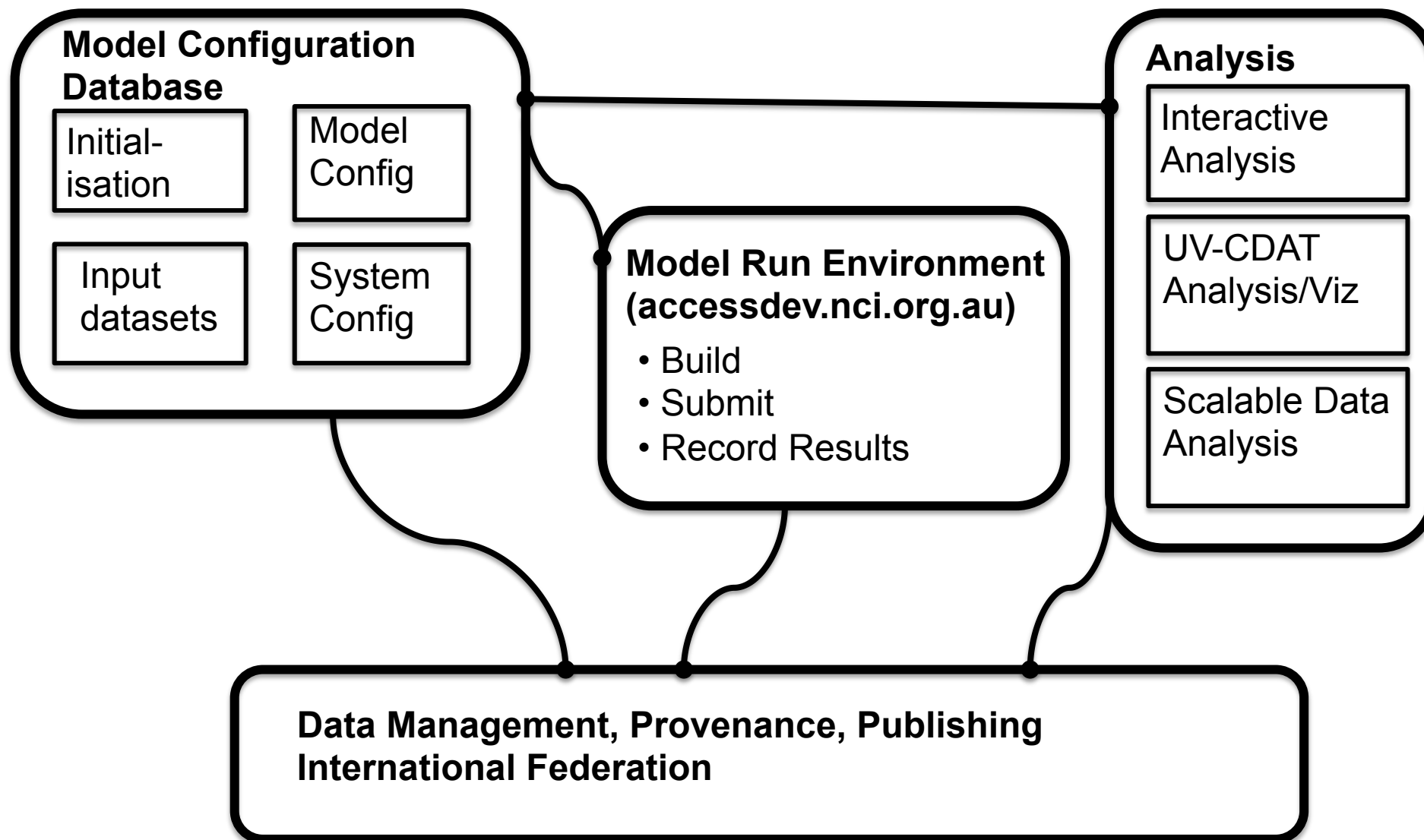
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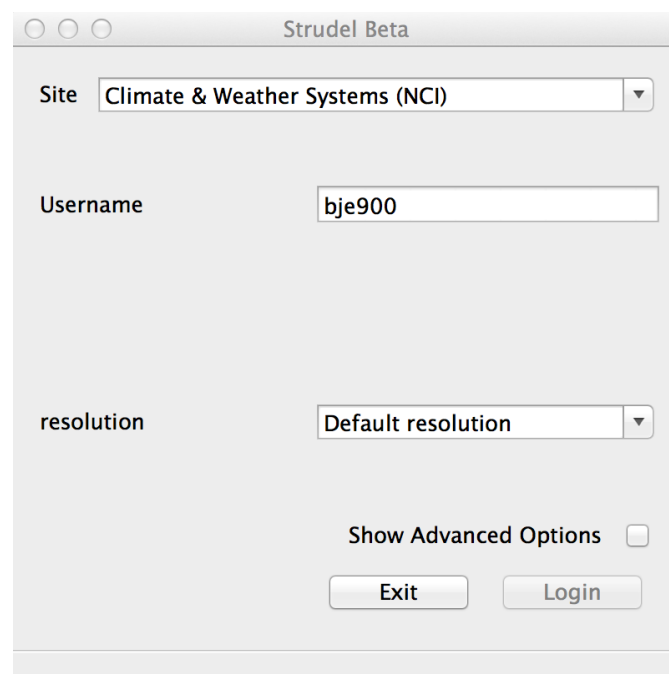
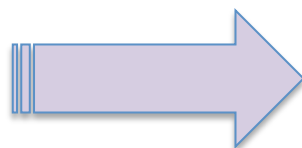


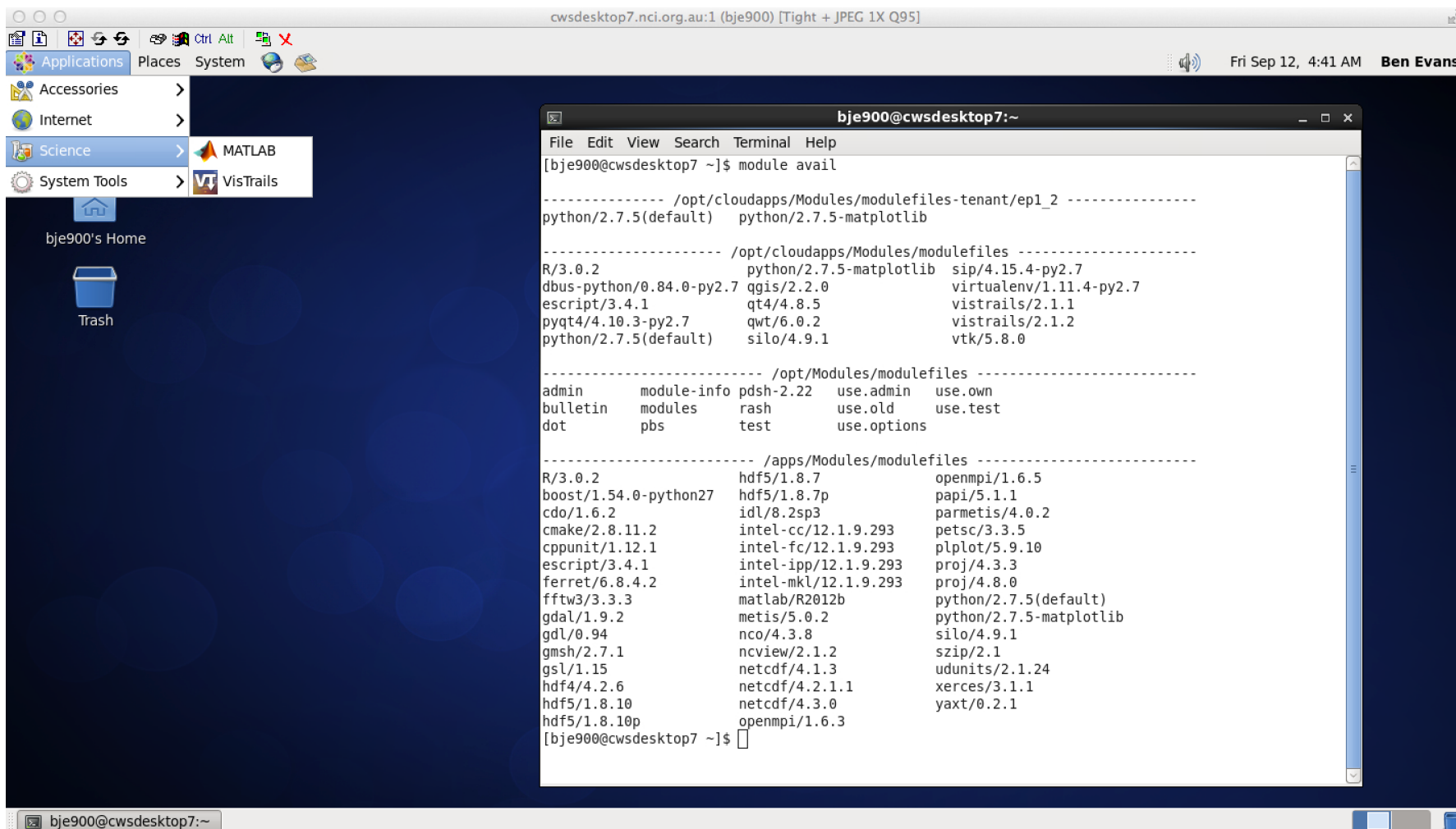
Collaboration: Bureau of Meteorology, CSIRO, NCI, ARCCSS



NCI Virtual Desktop Infrastructure (VDI)

- Using “Strudel” client (from Massive) for Linux, Mac, Windows and requires TurboVNC
- Uses NCI credentials (LDAP)
- Have customised versions of the desktop and considering how to best consolidate.
- Standard NCI Modules environment provided:
 - The Centos OS environment more flexible than Raijin so can support GUI and Viz packages better (eg Vistrails, various, OSGeo tools).
 - Raijin suite of software provided (undergoing porting).
 - Licensed software - bring your own license or connect to remote license server (eg Matlab, IDL)
- Resources
 - Provides dedicated node on the NCI private cloud and scalable
 - Initially providing pool with set size: 4CPU, 20GB RAM.
 - /home and /short (different to raijin), /g/data access, and local SSD “local” for fast IO attached to the session
- Can reconnect to a session if needed for background processing. Time limit provided on login. Will review how long an idle session will stay open.





The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "bje900@cwsdesktop7:~". The terminal output shows the results of the "module avail" command, listing available modules in three sections: /opt/cloudapps/Modules/modulefiles-tenant/ep1_2, /opt/cloudapps/Modules/modulefiles, and /apps/Modules/modulefiles.

```

bje900@cwsdesktop7 ~]$ module avail

----- /opt/cloudapps/Modules/modulefiles-tenant/ep1_2 -----
python/2.7.5(default)  python/2.7.5-matplotlib

----- /opt/cloudapps/Modules/modulefiles -----
R/3.0.2                python/2.7.5-matplotlib  sip/4.15.4-py2.7
dbus-python/0.84.0-py2.7  qgis/2.2.0                virtualenv/1.11.4-py2.7
escript/3.4.1           qt4/4.8.5                 vistrails/2.1.1
pyqt4/4.10.3-py2.7      qwt/6.0.2                 vistrails/2.1.2
python/2.7.5(default)    silo/4.9.1                 vtk/5.8.0

----- /opt/Modules/modulefiles -----
admin    module-info  pdsh-2.22  use.admin  use.own
bulletin  modules      rash       use.old    use.test
dot       pbs          test       use.options

----- /apps/Modules/modulefiles -----
R/3.0.2                hdf5/1.8.7                openmpi/1.6.5
boost/1.54.0-python27  hdf5/1.8.7p               papi/5.1.1
cdo/1.6.2              idl/8.2sp3                parmetis/4.0.2
cmake/2.8.11.2         intel-cc/12.1.9.293       petsc/3.3.5
cppunit/1.12.1        intel-fc/12.1.9.293       plplot/5.9.10
escript/3.4.1         intel-ipp/12.1.9.293      proj/4.3.3
ferret/6.8.4.2        intel-mkl/12.1.9.293      proj/4.8.0
fftw3/3.3.3           matlab/R2012b             python/2.7.5(default)
gdal/1.9.2            metis/5.0.2               python/2.7.5-matplotlib
gdL/0.94              nco/4.3.8                 silo/4.9.1
gms/2.7.1             ncview/2.1.2              szip/2.1
gsL/1.15              netcdf/4.1.3              udunits/2.1.24
hdf4/4.2.6            netcdf/4.2.1.1            xerces/3.1.1
hdf5/1.8.10           netcdf/4.3.0              yaxt/0.2.1
hdf5/1.8.10p         openmpi/1.6.3

[bje900@cwsdesktop7 ~]$
  
```

cwsdesktop7.nci.org.au:1 (bje900) [Tight + JPEG 1X Q95]

Applications Places System Fri Sep 12, 4:47 AM

Computer
bje900's Home
Trash

amos-vnc-demo:1 (fp599) - VNC Viewer

historical-rsds-95pct.vt

File Edit Workflow Vistral Views Publish Packages Window Help

New Open Save

Workspace Pipeline: ROOT + 42

Current Vistrails
historical-rsds-95pct.vt
My Vistrails

Modules

- Basic Modules
- Dialogs
- HTTP
- Model Analysis Service
- My SubWorkflows
- PythonCalc
- VTK
- Vistrails Spreadsheet
- matplotlib

Module Documentation

Module name: CDO_Remap2D
Module package: cawcr.cwsl.mas

DESCRIPTION
This Vistrails module contains operators to remap all input fields to a new horizontal grid. Each operator uses a different remapping method. The interpolation is based on an adapted SCRIP library version. More info is in Schulzweida 2013 CDO Users Guide.pdf section 2.12 Interpolation

OPERATORS
These are the possible interpolation methods
remapbil - Bilinear interpolation
remapbic - Bicubic interpolation
remapdis - Distance-weighted average remapping
remapnn - Nearest neighbor remapping
remapcon - First order conservative remapping
remapcon2 - Second order conservative remapping
remaplaf - Largest area fraction remapping

PARAMETER
grid STRING Target grid description file or name
The allowed grid definitions (values for grid_def) are of the form
r<NX>-x<NY> - Global regular grid, defines a global regular lonlat grid. The number of the longitudes <NX> and the latitudes <NY> can be selected at will. The longitudes start at 0 with an increment of (360/<NX>). The latitudes go from south to north with an increment of (180/<NY>).
eg. r360x180 grid with 1 deg resolution. r240x120 or r260x180

Module Information

Name: remapbil-360x180
Type: CDO_Remap2D
Package: cawcr.cwsl.mas

Inputs Outputs Annotations


in_dataset operator
Interpolate: String (remapbil)
par_01
grid def: String (r360x180)

1985-2013 (CDO_SelectTime)
Time Min (CDO_TimeStats)
remapbil-3 (CDO_Remap2D)
hist-rsds (DownloadedDS)

VisTrails 2.1.2

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J. Freire, C. Silva, E. Anderson, L. Bavoil, C. Brooks, J. Callahan, S. Callahan, L. Carlo, T. Ellqvist, D. Koop, L. Lins, P. Mates, R. Rampin, D. Rees, E. Santos, C. Scheidegger, N. Smith, H. Vo

Initializing vtk...



cwsdesktop7.nci.org.au:1 (bje900) [Tight + JPEG 1X Q95]

Applications Places System

Fri Sep 12, 4:47 AM

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Ncview 2.1.1

ACCESS1-0 model output prepared for CHIP5 historical

displaying Sea Water Potential Temperature


frame 1/12 16-Jan-2005 12:00:00 (2 bnds:1-Jan-2005 00:00:00 -> 1-Feb-2005 00:00:00)

displayed range: 271.222 to 306.397 K

Current: (i=351, j=289) 1e+20 (x=76.91624, y=68.15554)

Quit ->1 << >> Edit ? Delay: Opts

3gauss Inv P Inv C Mag XI Linear Axes Range Bi-lin Print

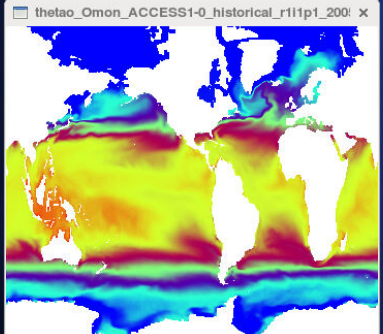


Var: time_bnds lev_bnds lat lon

lat_vertices lon_vertices **thetao**

Dim:	Name:	Min:	Current:	Max:	Units:
Scan:	time	731962	1-Feb-2005 00	732296	days since 00
	lev	5	5	5832.63	m
Y:	j	0	-Y-	299	1
X:	i	0	-X-	359	1

thetao_Omon_ACCESS1-0_historical_r1i1p1_200i x





Ben.Evans@anu.edu.au