INDC reporting - Project Nuclear Data Services Dissemination - Deployment

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IAEA
International Atomic Energy Agency

Content

- News
  - libraries
  - codes, features
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- Deployment - dissemination
- Statistics
- Conclusions

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New libraries & updates

- CENDL-3.2 Chinese evaluated neutron data library
- JENDL/PD-2016.1 Photonuclear Data File 2016 rev. 1
- IAEA-PD-2019 Photonuclear Data File
- JENDL/ImPACT-2018 JENDL LLFP Transmutation Cross Section File
- JENDL/AD-2017 Activation Cross Section File for Nuclear Decommissioning
- TENDL-2019 TALYS-based & Pointwise 2020

Reactors physics temperatures

#	List	Download
1	0° Kelvin	tarball:369Mb
2	293.6° Kelvin	tarball:317Mb
3	600° Kelvin	tarball:290Mb
4	900° Kelvin	tarball:275Mb
5	1200° Kelvin	tarball:264Mb

Astrophysics temperatures

#	List	Download
1	1 eV	tarball:101Mb
2	1 KeV	tarball:223Mb
3	5 keV	tarball:240Mb
4	30 keV	tarball:256Mb
5	80 keV	tarball:263Mb

Temperatures independant

#	List	Download
1	MFOther	tarball:542Mb

- EPICS2017, latest upgrade in 2020

New codes & updates

- Radioactive decay data (MF8/MT457): output to JSON, plot, comparison
- Plotting groupwise data online
- Cross sections (MF3) forms with uncertainties and covariances (MF33) in JSON

- PREPRO 2019, rev 1, ENDF/B-6 pre-processing code
- GRUCON 2020, data processing package

New portal: ConDERC

Compilation of Nuclear Data Experiments for Radiation Characterisation (CoNDERC)

The purpose of the CoNDERC project is to transfer into technology the experimental integral radiation information that can be used as part of the Validation and Verification processes of nuclear model and code systems, and to provide various schema to perform the V&V. Under the auspices of the IAEA Nuclear Data Section, individuals and institutions are assembling several of databases and code infrastructures based on their own V&V activities mainly associated with inventory, activation-transmutation, source term and radiation shielding R&D.

Decay Heat

- Fusion Events
- Fission Events

Spectra

- Spectra

Shielding

- Aspis
- FNS
- NIST
- Oktavian
- Pulsed
- Replica
- Tiara

Beyond Keff

- MCNP
- TRIPOLI

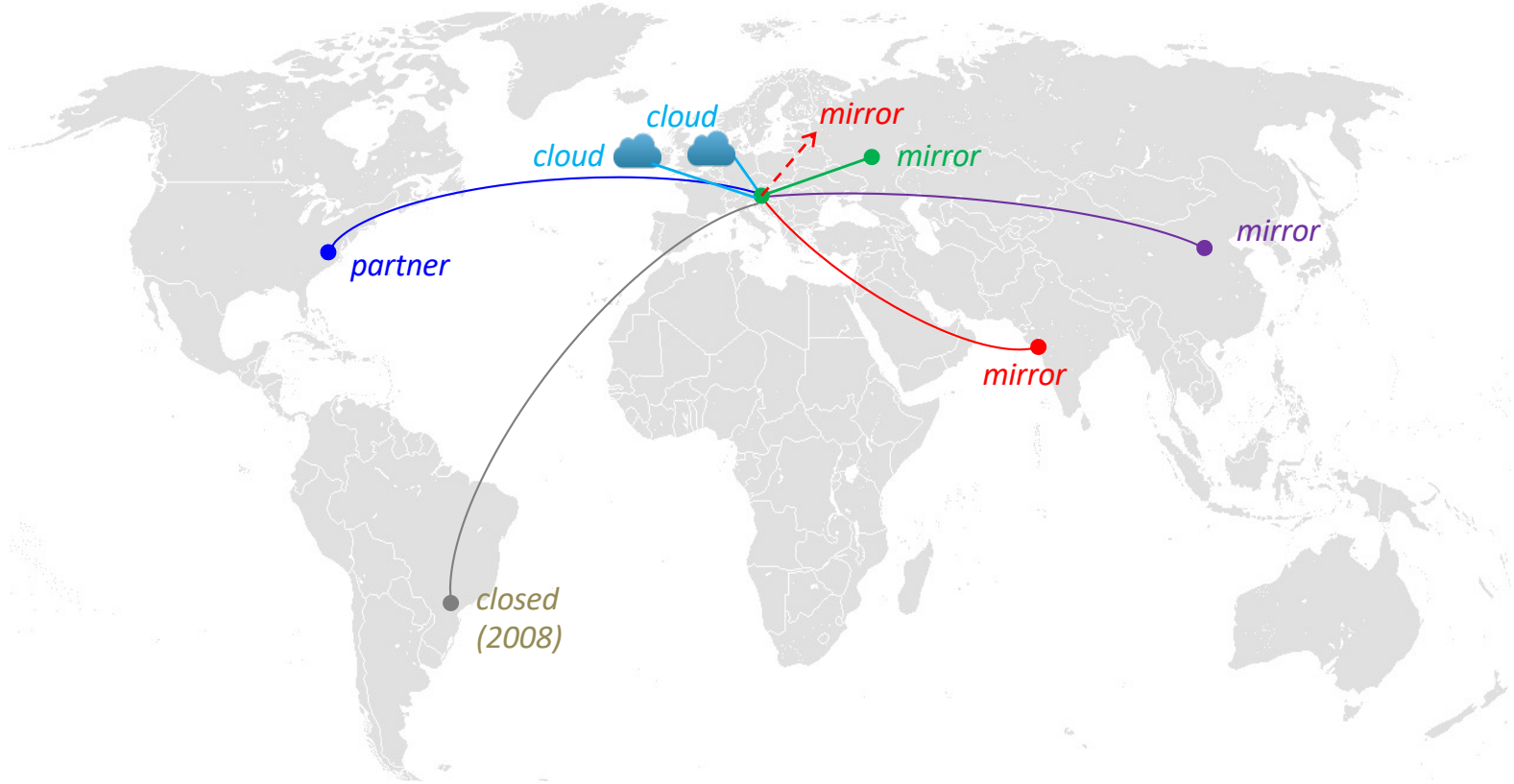
Experiments

- Thermal Resonance
- Baghdad Atlas

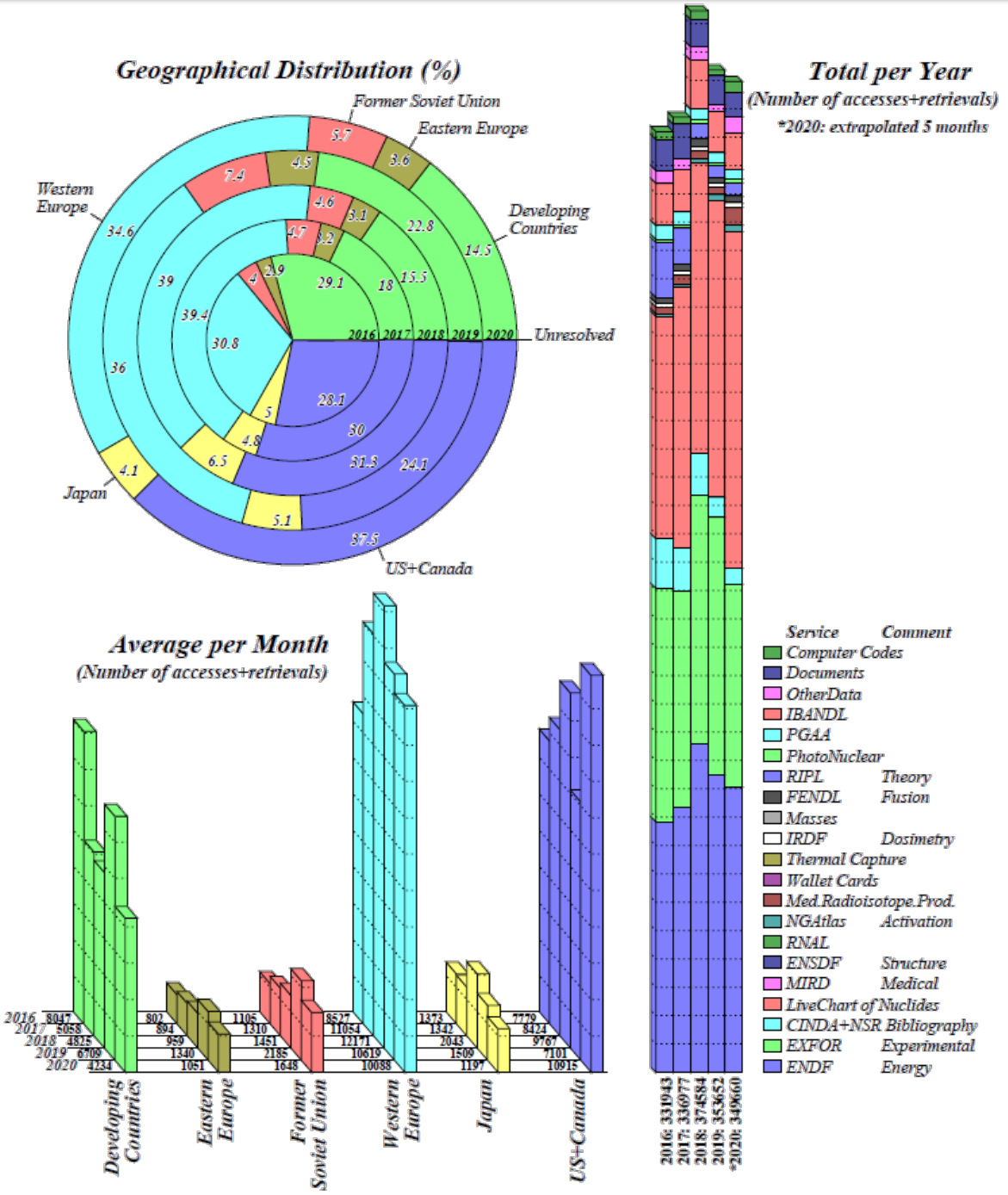
Data dissemination through Mirror-sites

EXFOR-ENDF-CINDA Web system on:

• **IAEA-NDS**	http://www-nds.iaea.org/exfor/ → *IT-dep.* ⇉	cloud servers	/functioning
• **NNDC, USA**	http://www.nndc.bnl.gov/exfor/	partner	/functioning
• **BARC, India**	http://www-nds.indcentre.org.in/exfor/	mirror	/re-opening
• **CNDC, China**	http://www-nds.ciae.ac.cn/exfor/	mirror	/frozen
• **Atomstandard, Russia**	http://www-nds.atomstandard.ru/exfor/	mirror	/functioning
• PNPI, Russia	http://www.pnpi.spb.ru/	org-mirror	/plan
• VirtualBox	http://localhost:5055	private-mirror	/trial
• IPEN, São Paulo, Brazil	http://www-nds.ipen.br/	old-mirror	/closed



NDS Web statistics



Observable tendencies:

- Peaked in 2018
- Plateau @ ~330.000

Downloads statistics:

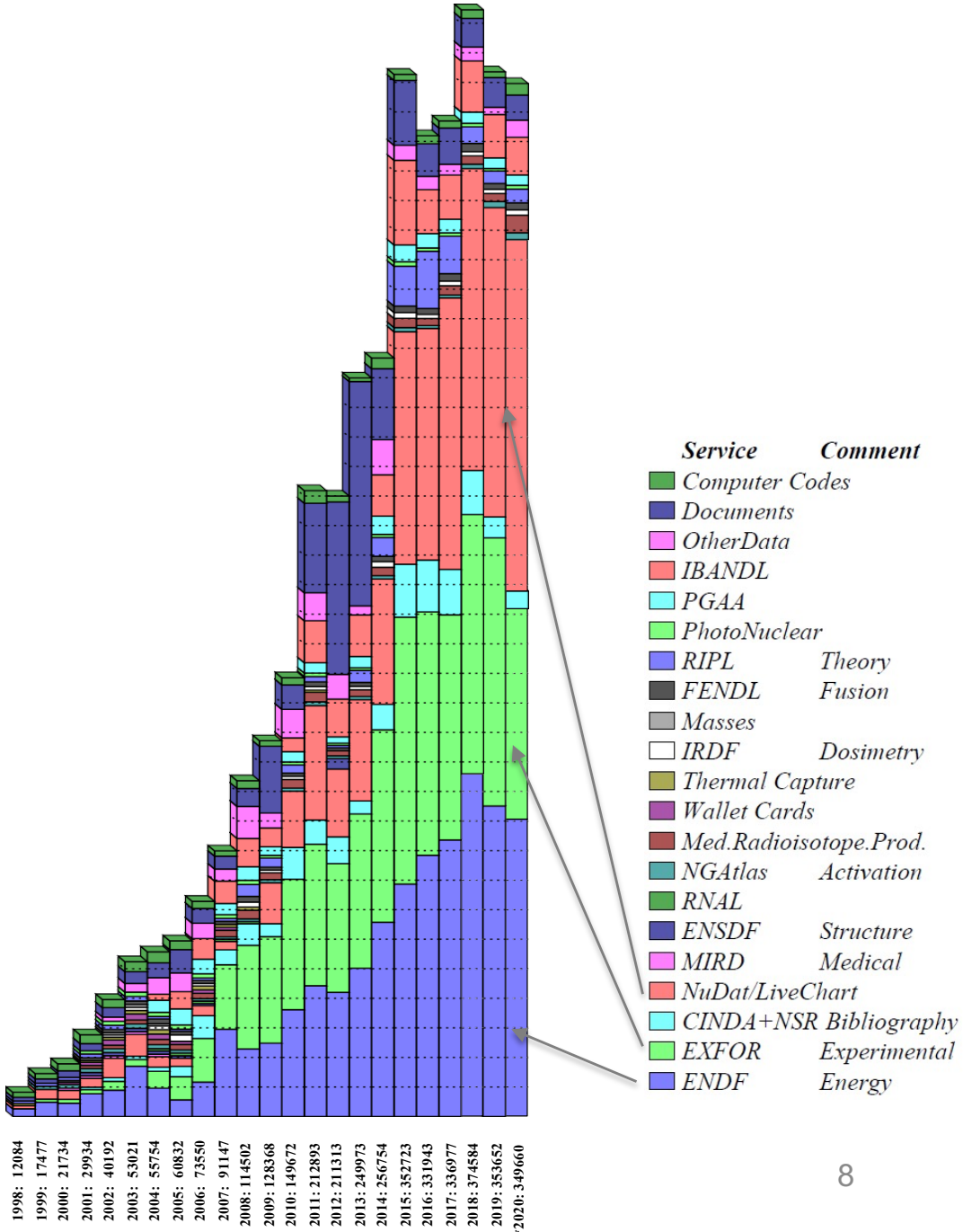
- ENDF ~ LiveChart ~ EXFOR @ 25-30%
- CINDA/NSR ~ IBANDL ~ Docs @ ~5%

Geographical outreach:

- US, Canada “growth” compensated by
- EU, others “withering”

NDS Web statistics

#.	Year	Counts	Growth	Notes
1.	1998	12,084		
2.	1999	17,477	+45.0%	
3.	2000	21,734	+24.4%	
4.	2001	29,934	+37.7%	
5.	2002	40,192	+34.2%	
6.	2003	53,021	+31.8%	
7.	2004	55,754	+5.2%	➔Linux/Java
8.	2005	60,832	+9.1%	
9.	2006	73,550	+20.9%	
10.	2007	91,147	+23.9%	
11.	2008	114,502	+25.6%	
12.	2009	128,368	+12.1%	
13.	2010	149,672	+16.6%	
14.	2011	212,893	+42.2%	
15.	2012	211,313	-0.8%	IT security
16.	2013	249,973	+18.2%	➔Clouds
17.	2014	256,754	+2.7%	
18.	2015	352,723	+37%	
19.	2016	331,943	-5.9%	
20.	2017	336,977	+1.5%	
21.	2018	374,584	+11.2%	
22.	2019	353,652	-5.6%	
23.	2020	349,660	-1.1%	



Conclusions

- Customer's outreach: have we reached a plateau?
  - due to customer's demands, satisfaction?
  - is the R&D field saturated? fading?
- Do the services correspond to the demand(s)?
  - in terms of quality? diversity? products?
  - is there a better way to serve?
  - continuity differs from sustainability

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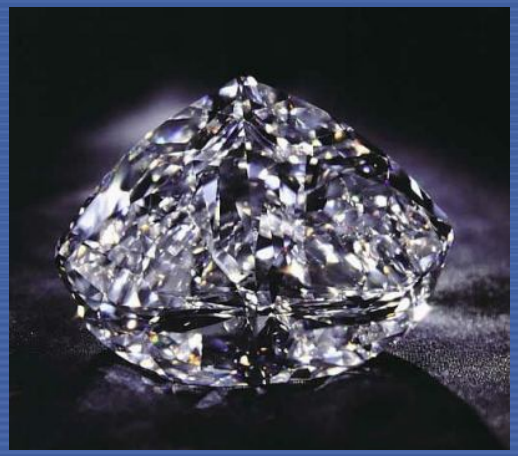
Data mining processes

shaping-designing services



Blue Zoe

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