

# WPEC EG-GNDS Meeting

25 June 2019

OECD-NEA, Boulogne-Billencourt, France



## AGENDA

Start	End	Topic	Participant(s)	Country
14:00	14:10	Welcome and introductions	David BROWN	UNITED STATES
14:10	14:20	Review of mailing list and membership	Michael FLEMING	NEA
14:20	14:40	Review of summary record and actions	David BROWN, Michael FLEMING	UNITED STATES, NEA
14:45	15:00	Status of the specifications for GNDS-1.9	David BROWN	UNITED STATES
15:00	15:30	Discussion and approval of version 1.9	All	
15:30	15:45	<b>Coffee Break</b>		
15:45	16:00	NEA GitLab and GNDS format proposal process	Michael FLEMING	NEA
16:00	16:30	Discussion on proposal/approval processes, GitLab Q&A	All	
16:30	16:50	Report on SG43 activities	Jeremy CONLIN, Caleb MATTOON	UNITED STATES
16:50	17:10	Review of GNDS support in codes	All	
17:10	17:30	Outreach and tutorials	TBD	
17:30	17:50	Nuclear data structure and format: applications or science driven?	Jean-Christophe SUBLET	IAEA
17:50	18:00	Any other business	All	

# **Status of specifications for GNDS-1.9**

*and*

# **Discussion and approval of version 1.9**

# **At WPEC EG-GNDS Meeting NEA, OECD Conference Centre, 15 May 2018, we agreed to several things**

- GNDS-1.9 is first official version EG-GNDS will “bless”
- GNDS-1.9 needs complete specifications
- We will maintain GNDS using NEA’s Gitlab
- We will develop format improvement mechanism modeled on the operations of CSEWG’s ENDF Formats Committee

# Draft specifications for GNDS-1.9 are ready

WPEC Subgroup-38 Final Report part II: Specifications for  
a new database structure

WPEC Subgroup 38

March 14, 2019

# Specifications doc. also cover series of “format proposals”

- **Several GNDS-1.9 formats are “quick-n-dirty” translation of ENDF-6, missing requested features:**
  - TSL
  - FPY
- **There are many loose ends**
  - Resonances
  - Covariances
- **Requirements mention several things we have not implemented**
  - Documentation
  - Several processed data forms

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- Several GNDS-1.9 formats are “quick-n-dirty” translation of ENDF-6, missing requested features:
  - TSL
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- There are many
  - Resonances
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- Requirements mention several things we have not implemented
  - Documentation
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**The format is  
big (385 pages),  
beautiful and complex**

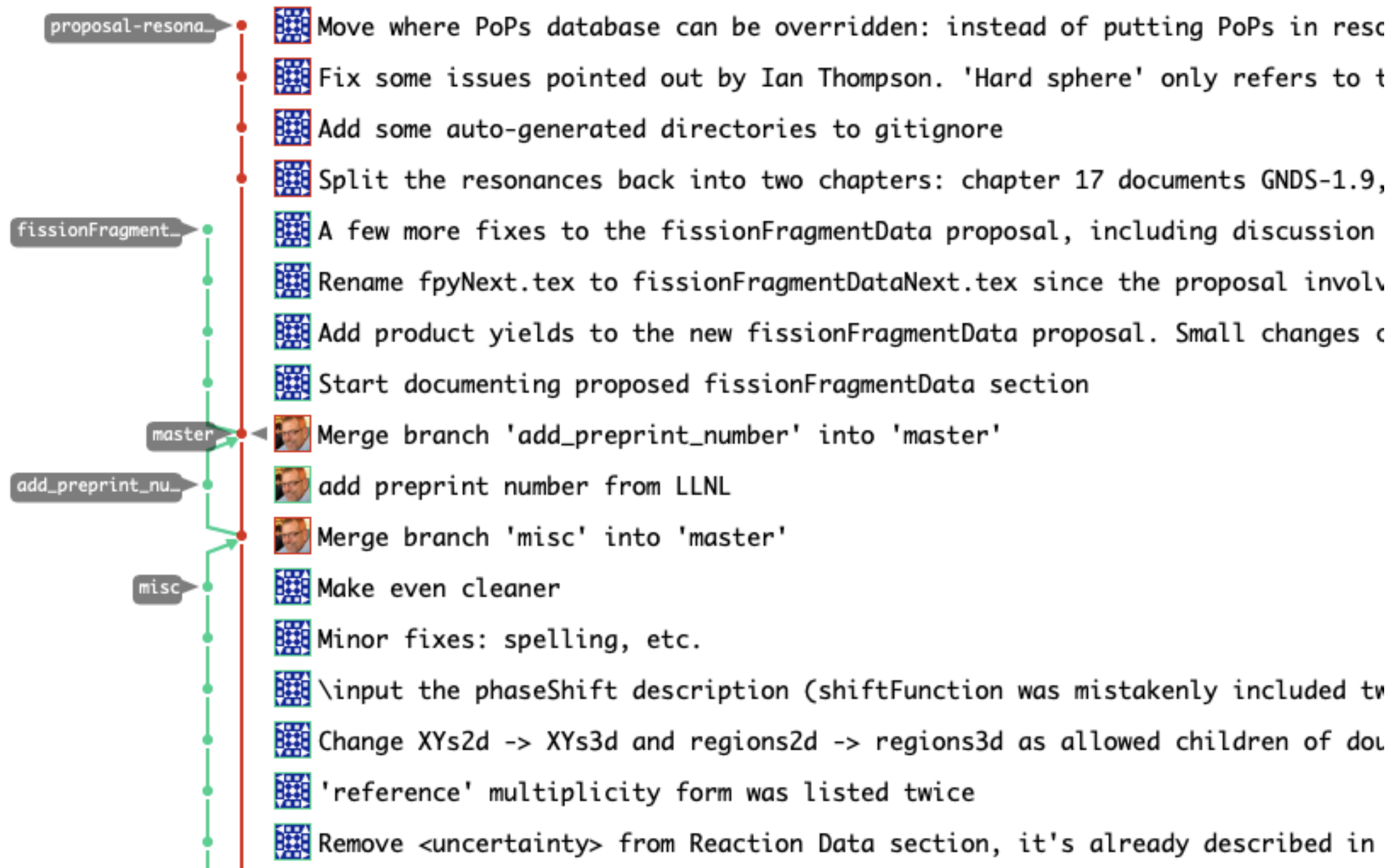
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# Current status is more dynamic than this, so look at git repo





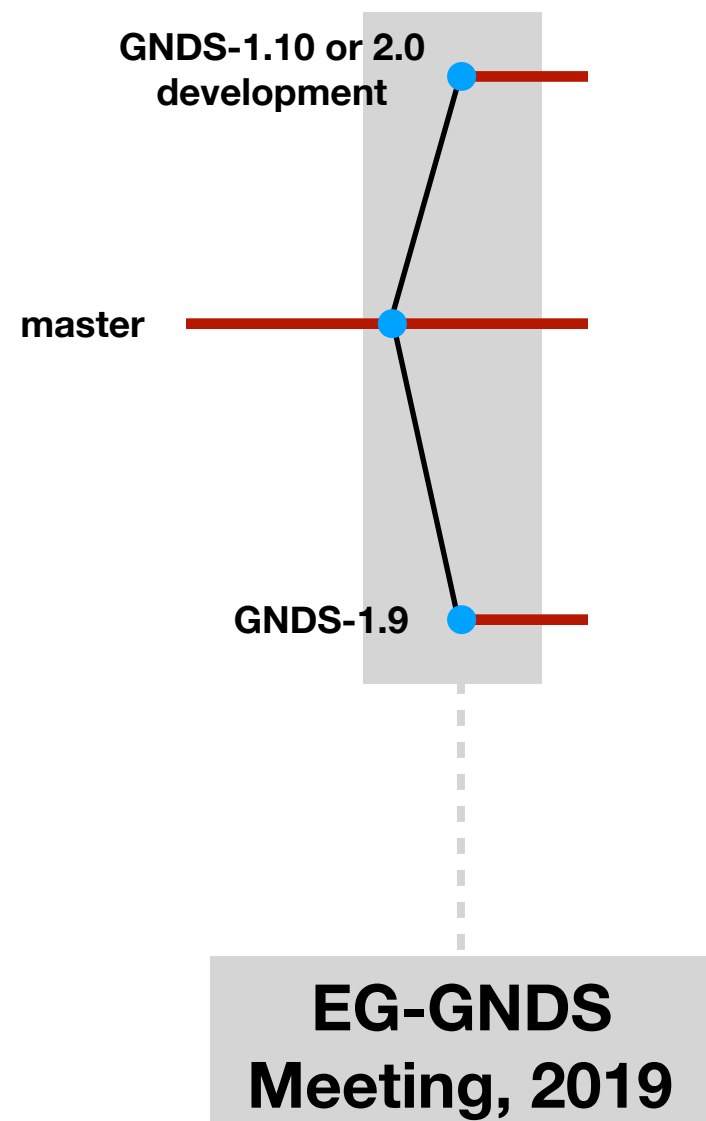
# So what do we do?

- We can't approve the GNDS-1.9 specifications as is, can we?
- Very few of us have read it all, how can we make an informed decision?
- But, the document will always have typos, things to tweak, etc., so in a sense *it will never be done*
- Only LLNL has implemented the whole thing and LLNL is finding errors in their implementation *and* they already want to move beyond GNDS-1.9

## My suggestion:

- approve 1.9 anyway, *and*
- engineer a mechanism for continuous improvement

# Harness the power of git



I propose we

- approve GNDS-1.9, *as is*, today
- make 2 git branches
- *lock them*

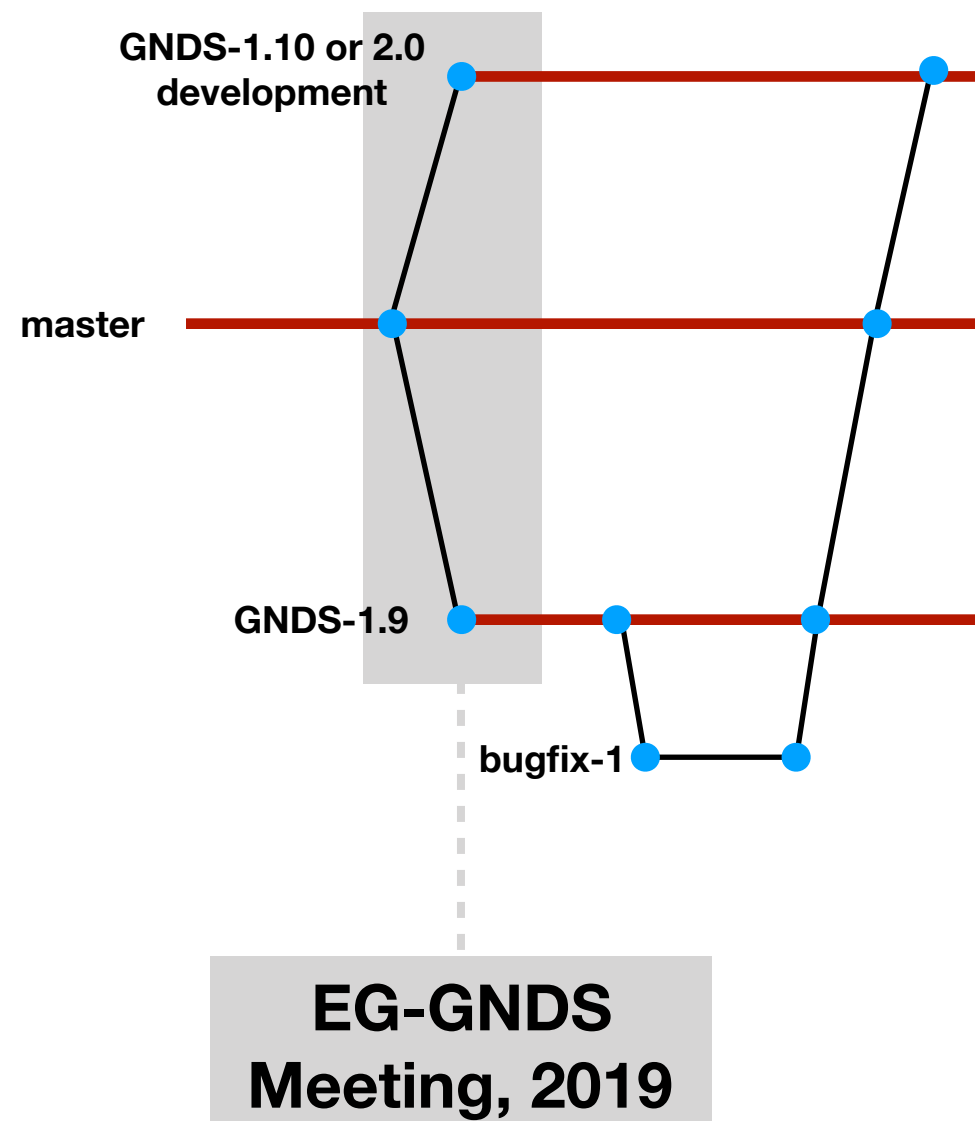
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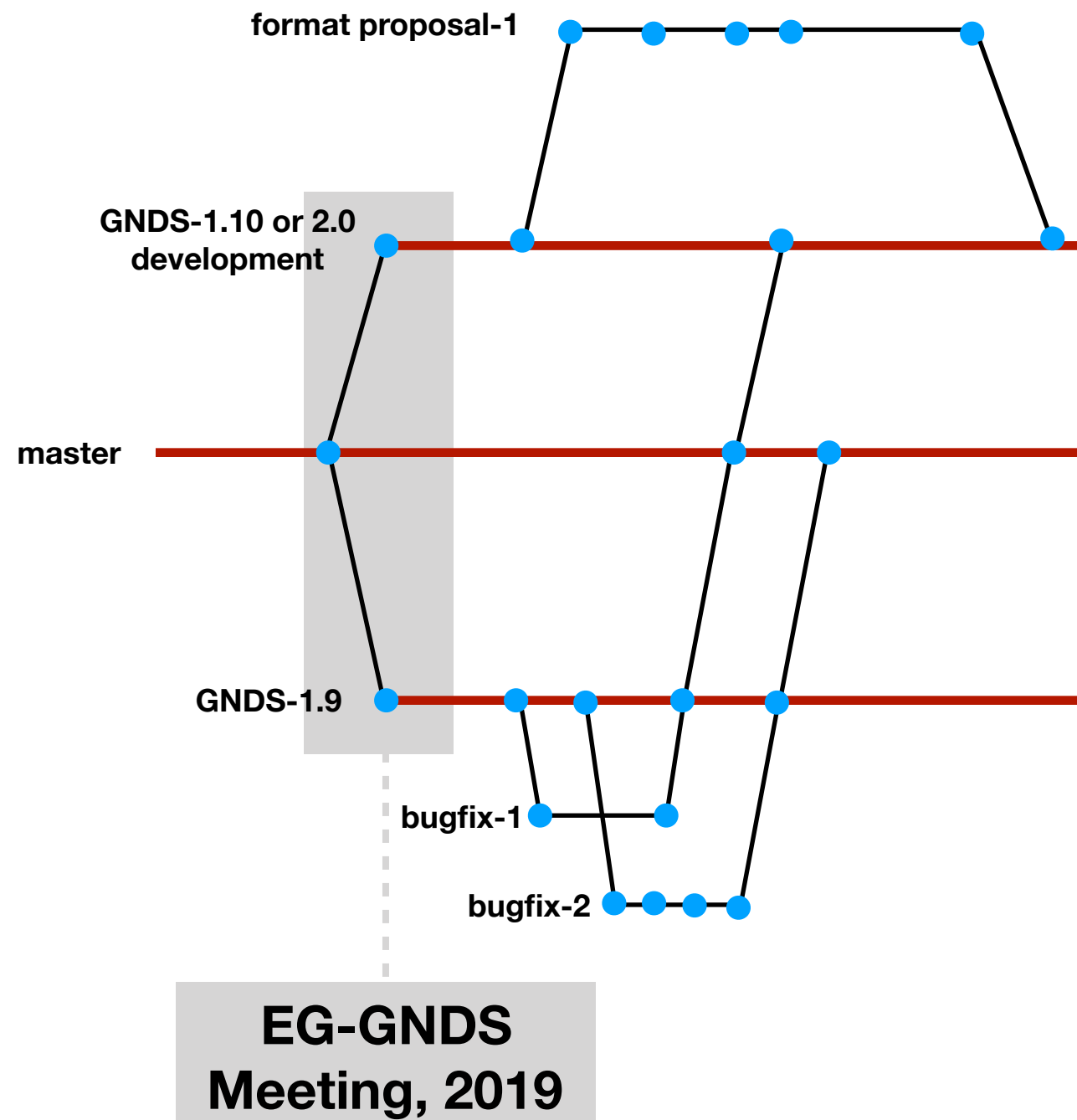
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Furthermore,

- use git's branch and merge mechanism to manage fixes



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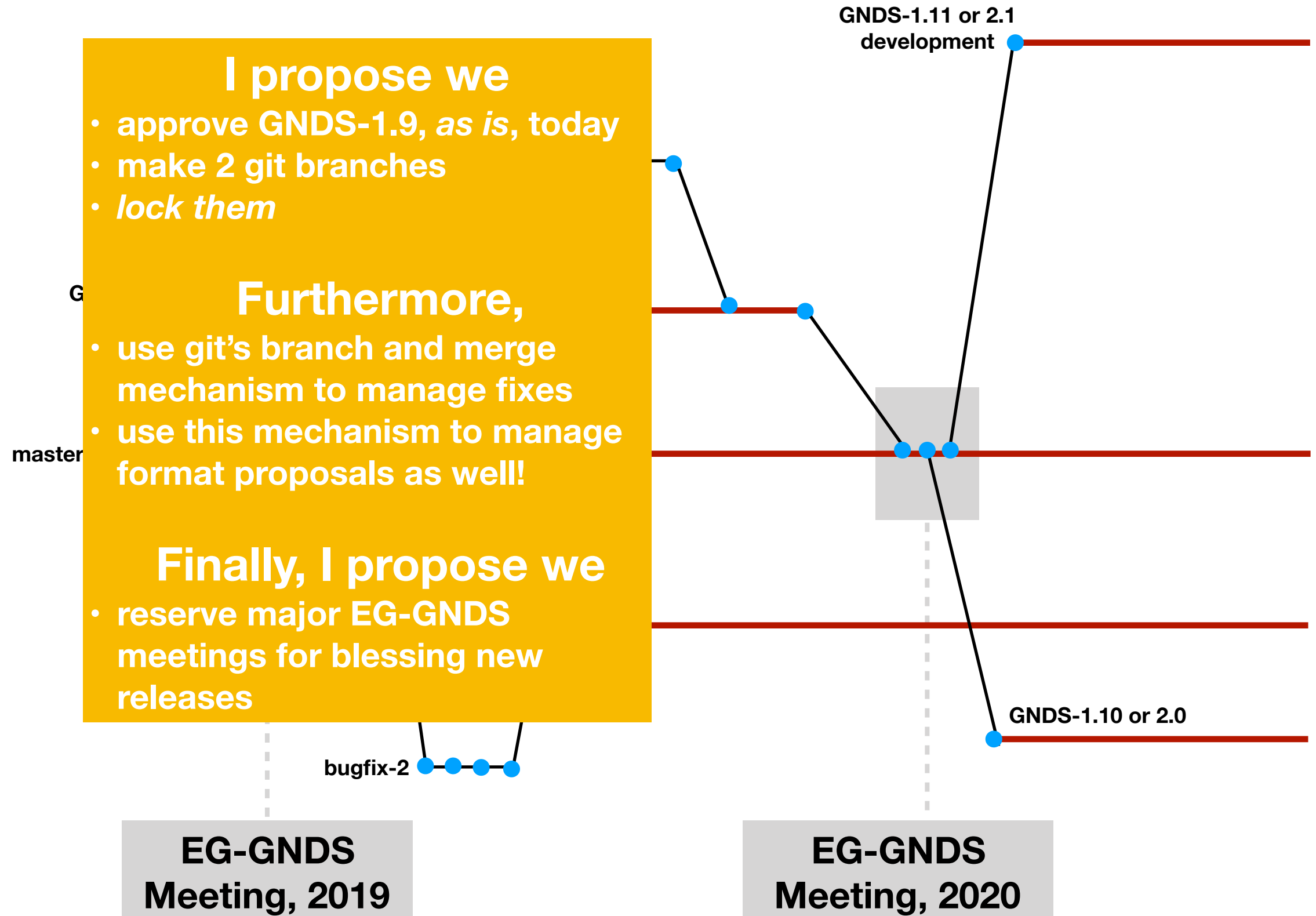
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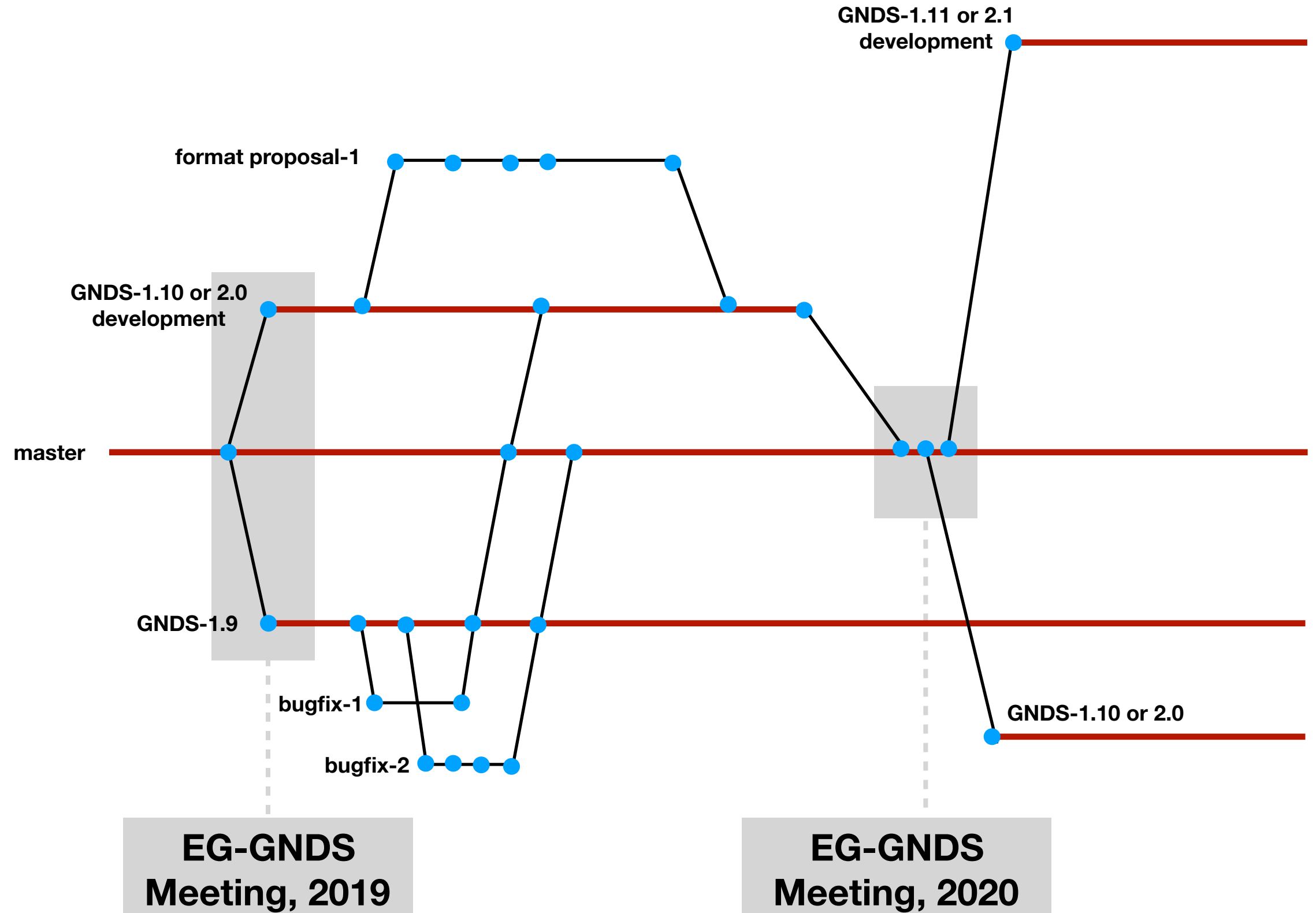
Furthermore,

- use git's branch and merge mechanism to manage fixes
- use this mechanism to manage format proposals as well!

# Harness the power of git



# Harness the power of git



# In summary

## **I propose we**

- approve GNDS-1.9, *as is*, today
- make 2 git branches
- *lock them*

## **Furthermore,**

- use git's branch and merge mechanism to manage fixes
- use this mechanism to manage format proposals as well!

## **Finally, I propose we**

- reserve major EG-GNDS meetings for blessing new releases

**Michael will explain proposed review process and how we will keep each branch sane**



# Problems with this mechanism

- The structure of the format is contained in a JSON-formatted meta-format (it isn't scary)
- The PDF is built from frame LaTeX documents & automatically generated text from meta-format (not scary in principal)
- In the rush to put the whole system together, the project is a complex, fragile mess

**Until project is cleaned up & organized better, changes should be done in collaboration with someone who knows how system works:  
D. Brown, C. Mattoon, J. Conlin, W. Haeck, D. Wiarda, M. Fleming...**

# Other questions

- How would NEA document versioning align with this model?
- What reviews are needed for final documents at each of our institutions?

# Outreach and tutorials

# Pros

- We're getting asked for information
- We have specifications
- LLNL has C++ APIs: <https://github.com/LLNL/gidiplus>
- We have a full library (ENDF/B-VIII.0) in GNDS-1.9

# Cons

- Do we have a champion/lead for this activity?
- Current LLNL Python APIs are not publicly available yet. Old version available at BNL: <https://www.nndc.bnl.gov/endl/codes/FUDGE/index.html>