DE LA RECHERCHE À L'INDUSTRIE

SG43: CODE INFRASTRUCTURE TO SUPPORT A GENERAL NUCLEAR DATABASE STRUCTURE (GNDS)

WPEC Meeting, 17-18/05/2018 | Fausto MALVAGI, Caleb MATTOON, Jeremy CONLIN

www.cea.fr

MALVAGI, MATTOON,
CONLIN

THE SG43 MANDATE

Goals

- To define an interface (API) for reading/writing GNDS
- To define physical checks to “validate” new evaluations

Stretch Goals

- To develop and share implementations of:
  - Reading/writing tools for evaluation manipulations
  - Visualization tools
  - Tools to generate evaluations from covariances
- To develop and share implementations of
  - Checking tools

Users

- Evaluators (and their codes)
- Processing codes (FUDGE, NJOY, AMPX, GALILEE, …)

ORGANIZATION (SET IN 2017)

Two Working Groups

- API Definition/implementation (C. Mattoon)
  - Two styles: Object Oriented (OO) + Procedural (Flat)
- Checking (J. Conlin)

Working tools

- One meeting per year (WPEC week)
- Regular viso-conferences (every several weeks, alternating between the two WG)
- Collaborative space on GitHub
  https://github.com/GeneralizedNuclearData/SG43

FIRST YEAR PLANNING (2017-2018)

API Definition/Implementation

- Select simple cases (ReactionSuite and CrossSections)
- Write down specifications: ObjectOriented + Flat *(stand-by)*
- Get first implementations done

Checking

- Identify and collect existing checks
- Merge and prioritize them
- Get first implementations with available defined/implemented API

Meet again next year

- Assess status
- Advance

AGENDA WPEC 2018

13h30	1.	Introduction (F. Malvagi 15’)
13h45	2.	Progress towards API design (C. Mattoon 30’)
14h15	3.	Progress towards standardizing physics tests (J. Conlin 30’)
14h45	4.	Multifaceted data containers (J.-C. Sublet 30’)
15h15	5.	API design thoughts (W. Haeck 30’)
15h45		Break (15’)
16h00	6.	Implementing GIDI at LLNL (B. Beck 30’)
16h30	7.	Adding GNDS support to AMPX and SCALE (D. Wiarda 30’)
17h00	8.	Data testing (C. Jouanne 30’)
17h30	9.	Final discussion (all 30’)
18h00		Adjourn

CONCLUSIONS OF MEETING

API (OO)

- LLNL: FUDGE (read/write) and GIDI (read) are “complete” implementations
- ORNL: AMPX (read) partial implementation (1D XS), SAMMY will follows
- CEA: GALILEE (read) implementation will start this year
- LANL: NJOY21 (read) implementation will start shortly
- Convergence towards common (read) API during next 12 months
- Write API to be started later (we need input from evaluators)
- Problematic issue: GNDS version not stabilized!

Physics checks

- Need to classify checks for type of (evaluated/processed) data
- Waiting for API definition/implementation

THANK YOU FOR YOUR ATTENTION