

EFF-projectFirst phase (EFF-1) 1985-1988NET emphasis on tritium breeding  
+ n-multiplicationSecond phase (EFF-2) 1989-1991NET emphasis on shielding  
data base  
(+ Li, Be)Third phase (1992-1994)NET/ITER processing, benchmarking  
user assistance

1992 approved (reduced programme)

1993 } likely to be approved  
" " }

Different  
from  
JEF-2:

Table 1

EFF evaluations (or EFF/JEF)

→ Li-7	NG	<u>Birmingham, ECN</u>
→ Be-9	NG	<u>" "</u>
→ Al-27	RNG	<u>ENEA-Bologna</u>
→ Si-28	RNG	<u>ENEA-Bologna</u>
Cr-50	RNG	ENEA-Bologna
→ Cr-52	RNGC	<u>» + IRK + ECN</u>
Cr-53	RNG	JEF-2 / EFF-2 (ECN)
Cr-54	RNG	JEF-2 / EFF-2 (ECN)
Fe-54	RNG	JEF-2 / EFF-2 (ECN)
→ Fe-56	RNG	<u>K/K + IRK + ECN</u>
Fe-57	RNG	JEF-2 / EFF-2
→ Ni-58	RNGC	<u>ENDF/B-VI + IRK + ECN</u>
Ni-59	N	JEF-2
→ Ni-60	RNGC	<u>CEA + IRK + ECN</u>
Ni-61	RNGC	ENDF/B-VI
Ni-62	RNGC	ENDF/B-VI
Ni-64	RNGC	ENDF/B-VI
→ Pb	NC	<u>ECN</u>

56 other materials selected from other evals.

## EFF-2: Achieved

- Data file "distributed" for processing (ENEA Bologna)

- 9 "own" evaluations

25 from JEF-2

35 from other sources

69 materials

- Li-7 Birmingham - ECN

Angle-energy integrated mostly from ENDF/B-VI

N-distributions added to file 6 pointwise lab. distr.

- Be-9 Birmingham - ECN

idem, with

MT51 to describe  $(n,2n)$

through excited state

- Al, Si      ENEA-Bologna (G. Reffo)

Energy-angle integrated from JENDL-3

N-distributions:

Unified eq./preeq. model (IDA)  
ang. distr. leading particle  
model, Kikuchi-Kawai  
Scattering kernel

- $^{52}\text{Cr}$ ,  $^{56}\text{Fe}$ ,  $^{50}\text{Ni}$ ,  $^{60}\text{Ni}$

High-E range: M-Uhl

opt-model + unified eq./preeq.  
model calc. (MAURINA)

+DWBA

Formatting: ECN

All particle (+recoil) distributions  
for lumped quantity MT10 =

neutron emission

Low-E range: Reich-Horre

Cr-52 ENEA-Bologna

Fe-56 KJK

Ni-58 ENDF/B-VI

Ni-60 CEA-Cad.

Cov. data: IRK

High-E range: MF33, MF34  
+ table with  
SED (hot/cold)

Low-E range: MF33 (preliminary)

• Pb

EFF-1 + update (n, 2n)

1992 Programme  
(Phase 1 of 3 years programme)

1. Updating, file management, feedback from benchmarking, corrections in EFF-2 ECN
2. Processing tools improvements ECN  
Be-g  
Kalbach  
GROUPXS, etc
3. Processing EFF-2, ENEA-Bol.
4. Analysis shielding benchmarks (existing benchmarks) CEA Cad.
5. Cross sections in high-E range (Mo update) ENEA-Bol.
6. Bulk shield experiments (SS block) CEA Cad.+ ENEA Frascati

N.B. Phase 2: defined 1993-1994  
funding to be approved

# EAF - Project

## • EAF-1 Distr. Sept. '89

European Activation File  
for fusion reactor applications  
based upon REAC-ECN-5

## • EAF-2 Distr. Early 1991

ECN-C-91-073 (July 1991)

rather complete,  
except for  $(n, f)$  > actinide  
targets

## • EAF-3 Distr. May 1992

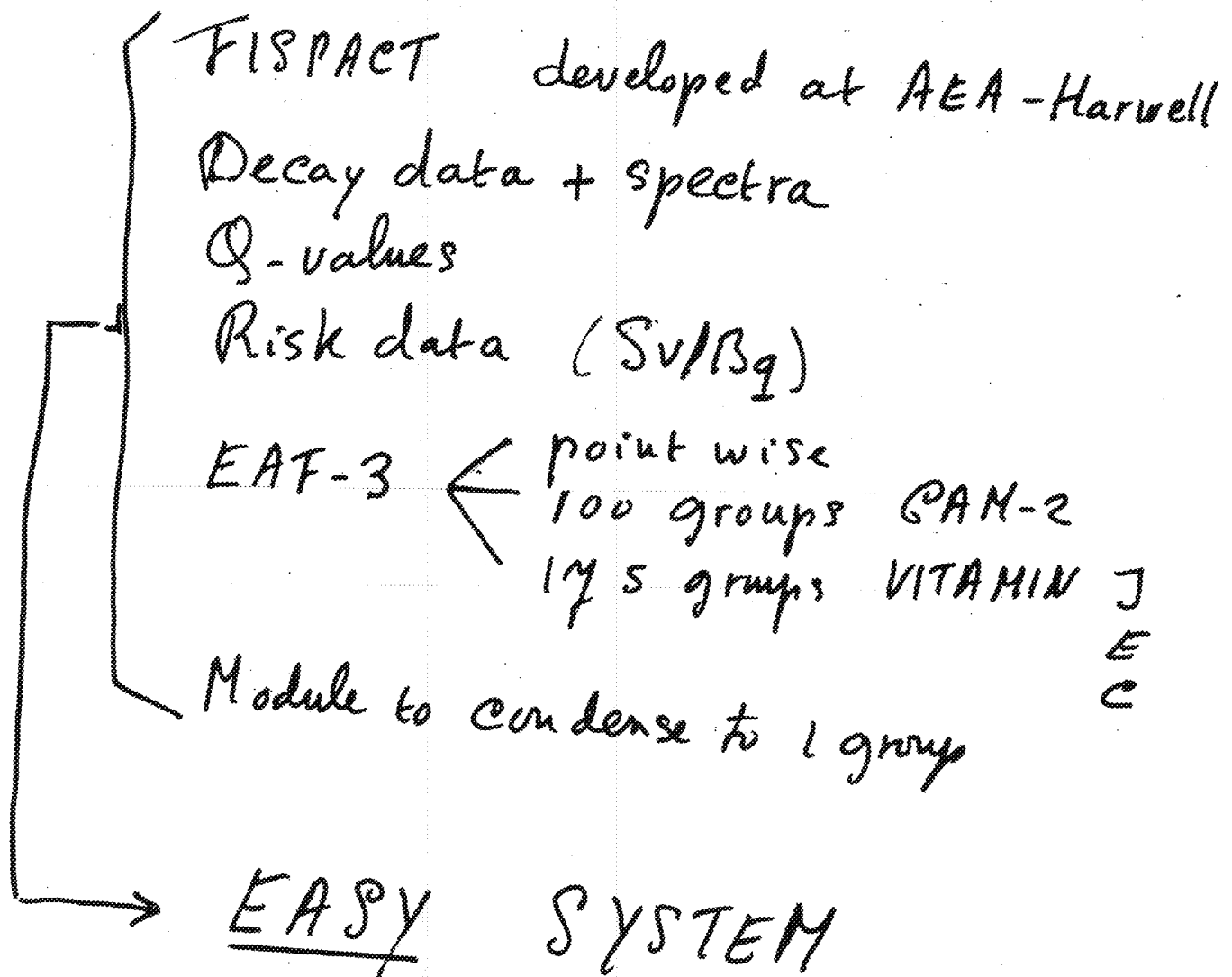
<sup>u</sup>incl.  $(n, f)$  reactions

Actinide targets:

Extended report in press.

(Also paper at F.P. meeting,  
JAERI)

## Associated code + libraries:



Also included:

- \* Uncertainties (1 group)
- \*  $A(n, x) B(x, y) C$   
data (K/K)



## Future development EAF

Period 1992-1994: programme defined + sponsored

- \* Improvement of quality
- \* More groups for uncertainty cases.
- \* Use for other applications  
e.g. transmutation.