



D/TEC-QCA Final Presentation Day, Jan 27, 2009



UNIVERSITY OF JYVÄSKYLÄ

News from RADEF

**ESA/ESTEC Contract No. 18197/04/NL/CP:
“High Energy Heavy Ion Test Facility for
Component Radiation Studies”**

Ari Virtanen, JYFL



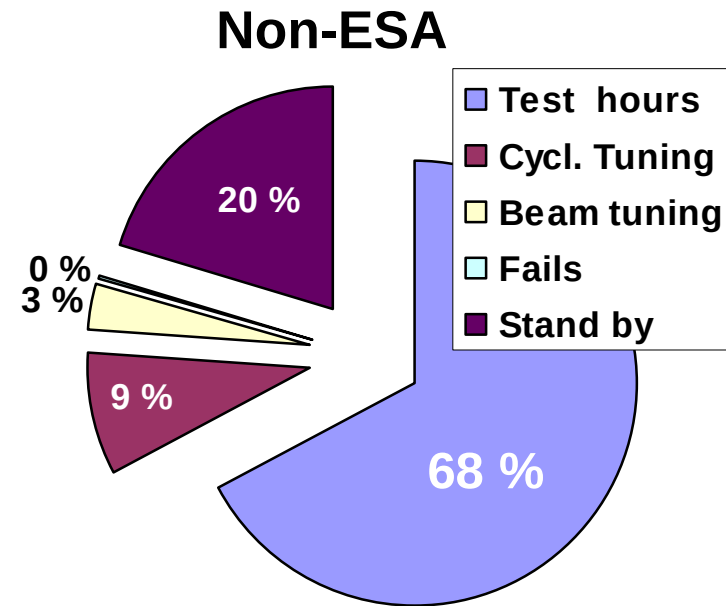
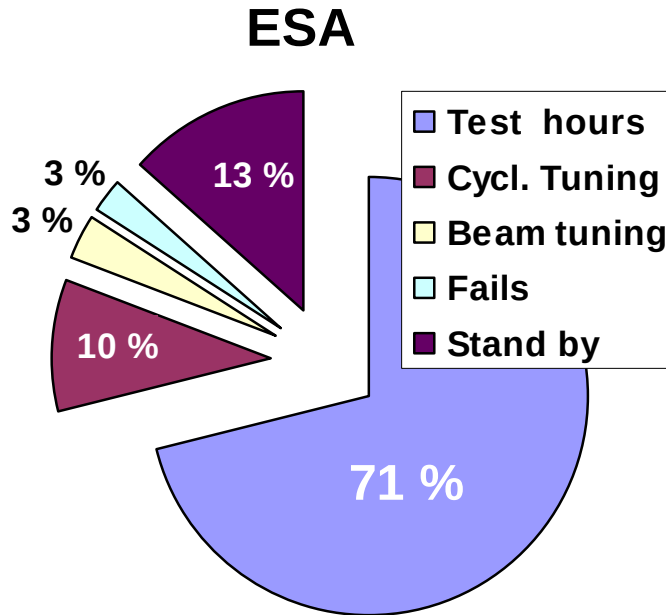


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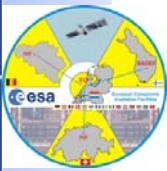
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584 total beam hours for 2008



Test hours = beam on DUT
Cycl. tuning < 4 hours/campaign
Beam tuning < 1 hour/ion change
Fails = overtime tunings
Stand-by = beam on Faraday cup



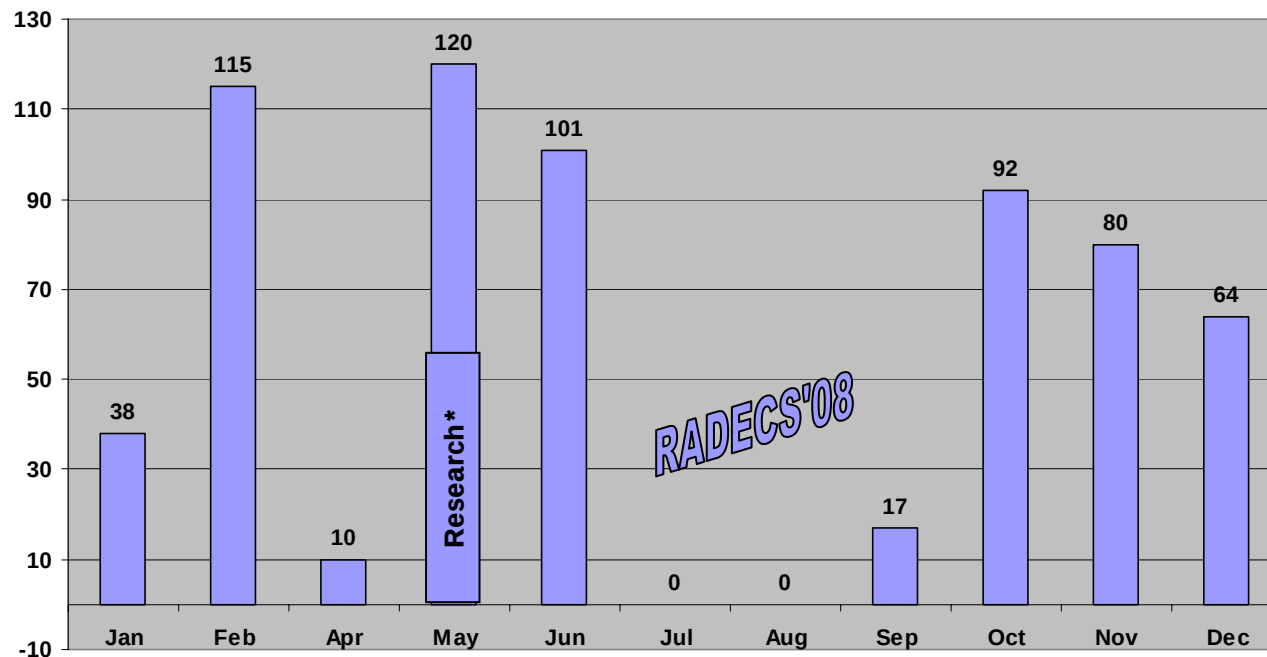


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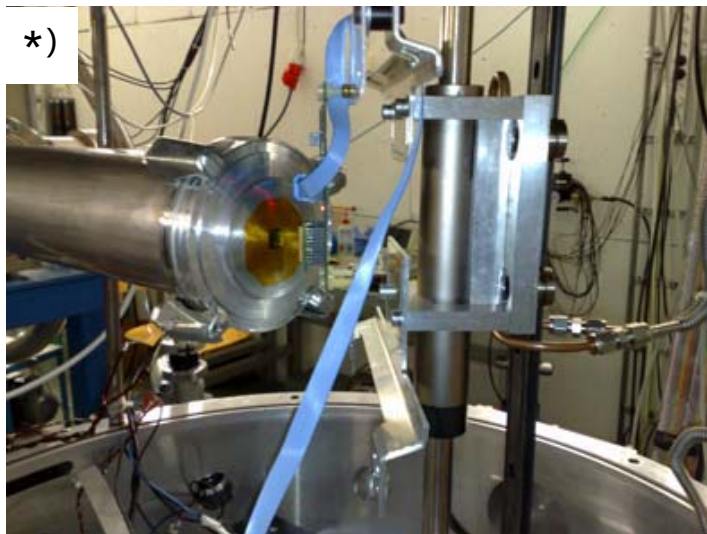
Monthly use of beam time (641 hours in 9 campaigns)



**A. Javanainen et al., Experimental linear energy transfer of heavy ions in silicon for RADEF cocktail species
RADECS Workshop Proc. (2008) 470–474 (Accepted for IEEE-TNS)*



Started irradiations in air:



Jan'09

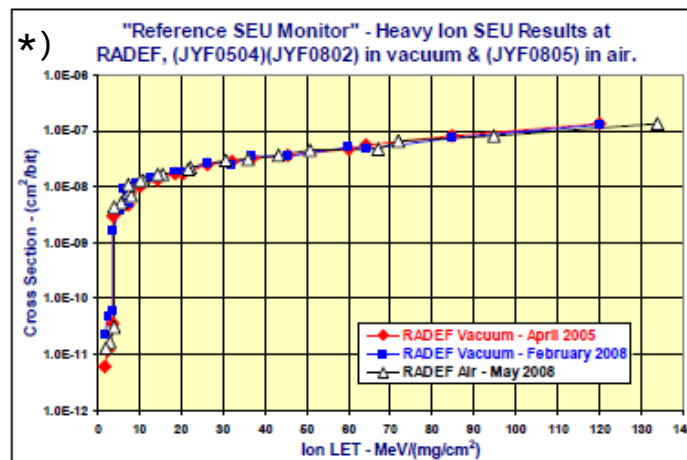
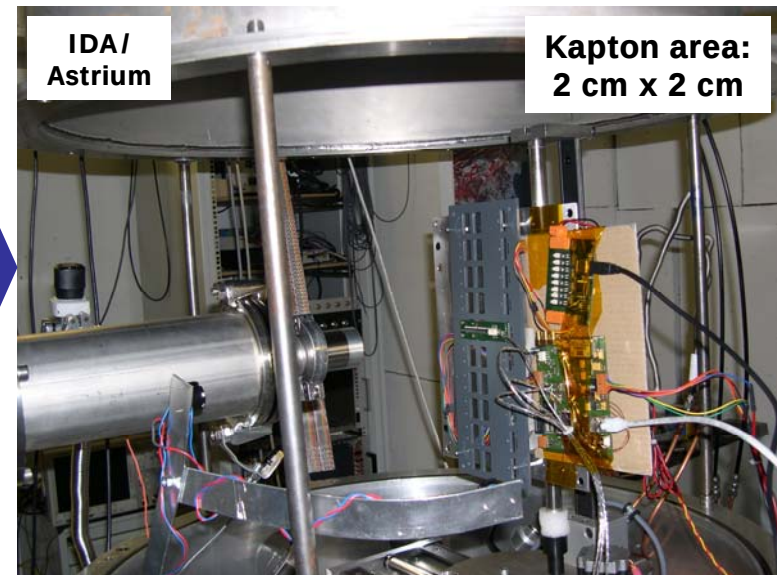


Fig. 5. Comparison of SEU obtained in Vacuum and in air.

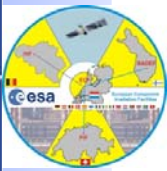
*)

TABLE I
Xe ION RANGES, LETs ($\times 10^{-8}$) & SEU CROSS-SECTIONS (cm²/BIT) AT DIFFERENT AIR DISTANCES

Behind 25 μ m Kapton and air (distances in cm): -							
Air	1	2	3	4	5	6	7
μ m	64.2	58.3	52.4	46.6	41.0	35.4	30.0
LET	65.0	66.7	67.7	68.7	69.0	68.7	67.5
σ	4.70	4.78	4.86	4.83	4.69	4.38	3.73

*)

R. Harboe-Sørensen, C. Poivey, F.-X. Guerre, A. Roseng, F. Lochon, G. Berger, W. Hajdas, A. Virtanen, H. Kettunen and S. Duzellier, From the Reference SEU Monitor to the Technology Demonstration Module On-board PROBA-II, IEEE TNS 55 No. 6 (1) (2008) 3082 - 3087



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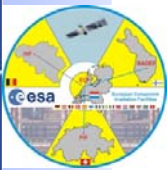


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We are getting a new 30 MeV proton cyclotron

- + increased beam time for RADEF in the future
- + new, bigger and more versatile site
- expected break end of 2009/begin 2010



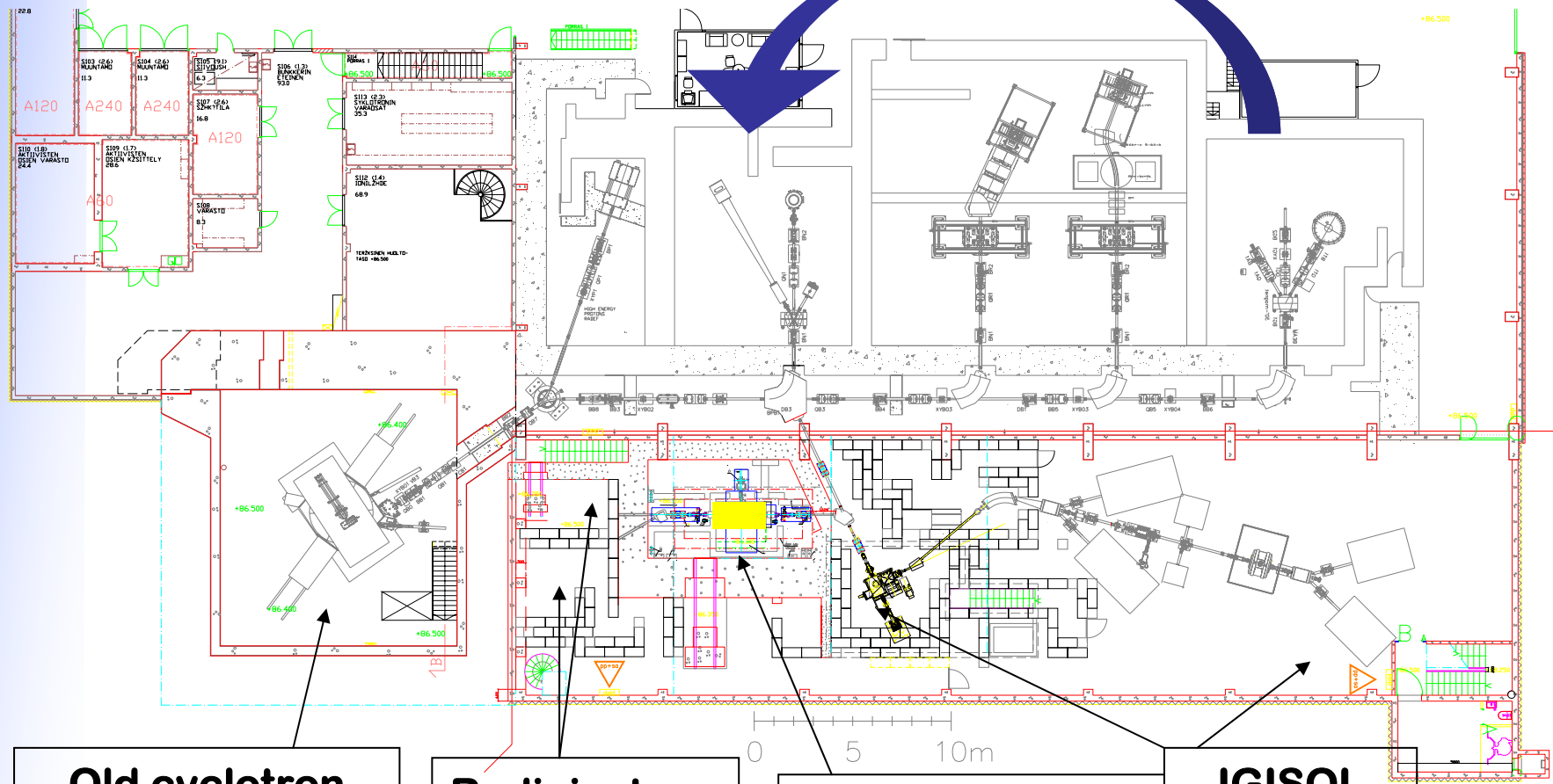


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RADEF



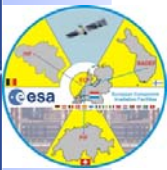
**Old cyclotron
K130**

**Radioisotope
production**

**New cyclotron
MCC30/15**

IGISOL





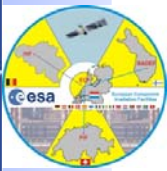
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January 14, 2009





New chamber into the 14 GHz ECR ion source

- changeable
- for RADEF cocktail beams
- only with gaseous ions
- improve the stability of ECR
- easier to coordinate beam times



But some things never change!

KOTIPIZZA MENU

PIZZA

	NORMAL	FAMILY	MEDIUM PAN
1 FILLING	6,30	14,40	8,30
MINCE PIZZA #3 Pizza with mince sauce			
MARGHERITA #10 Tomato sauce, extra cheese			

2 FILLINGS 7,40 15,80 8,80

OPERA #1
Tuna, ham
CAPRICCIOSA #4
Ham, mushrooms
TROPICANA #8
Ham, pineapple
PEPPERONI #12
Tuna, pepperoni sausage
ALLA POLLO #14
Grilled chicken, pineapple

3 FILLINGS 8,30 16,60 9,70

FRUTTI DI MARE #5
Tuna, prawns, mussels
SFIZIAL OPERA #6
Tuna, ham, salami
CACIATORI #7
Salami, peppers, olives
VEGETARIANA #9
Mushrooms, peppers, olives
AMERICANA #15
Ham, pineapple, Anza blue cheese
POLLO AMERICANA #17
Grilled chicken, pineapple, Anza blue cheese
BACON PIZZA #13
Roast bacon, egg, red onion

4 FILLINGS 8,80 18,60 10,20

GRILLED CHICKEN
Grilled chicken, salad, sauce of your choice
PEPPERONI-AURA BLUE CHEESE
Pepperoni, Anza blue cheese, red onion, pineapple, extra cheese
GRILLED CHICKEN
Grilled chicken, salad, sauce of your choice
PEPPERONI-AURA BLUE CHEESE
Pepperoni, Anza blue cheese, red onion, pineapple, extra cheese

SMALL PAN PIZZAS

1 FILLING 6,20
Pepperoni sausage
2 FILLINGS 6,90
Pepperoni sausage
3 FILLINGS 7,60
Pepperoni sausage
4 FILLINGS 8,30
Pepperoni sausage

COFFEES

ROBERT PAULUS COFFEE 1,35
ESPRESSO 1,80
DOUBLE ESPRESSO 2,40
CAPPUCINO 2,20
CAFE LATTE 2,40
TEA 1,10
HOT CHOCOLATE 1,60
FAZER CHOCOLATE OR RASPBERRY MUFFIN 2,00

DRINKS

DONKEY AS MUCH AS YOU LIKE 2,30
Coca-Cola, Coca-Cola Light, Sprite-ZERO, Fanta, carbonated water
0.5 L BOTTLE 2,30
Coca-Cola, Coca-Cola Light, Coca-Cola ZERO, Fanta, Fanta Light, Sprite-ZERO, BonAqua
0.5 L BOTTLE, SPRING WATER 1,80
1.5 L BOTTLE 3,30
Coca-Cola, Coca-Cola Light, Coca-Cola ZERO, Fanta, Fanta Light, Sprite-ZERO, BonAqua
0.33 L BATTERY 2,40

THANKS AND WELCOME TO RADEF

When you buy a pizza, medium pan pizza, salad or a Nozone meal for your lunch you can drink as much cups of the beverage of your choice as you like.

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