# Notes HISPEC/DESPEC Meeting GSI 27.-28.2.2012

## Administrative:

Within the FAIR Research branch, a NUSTAR team has been established with

- Alexander Herlert, NUSTAR Resource Coordinator
- Jürgen Gerl, NUSTAR Technical Coordinator
- Namita Goel, NUSTAR Technical and Administrative Officer

Both Alexander and Namita introduced themselves and their job description. In short, they are supposed to (i) bug us for all sort of information that FAIR requests from NUSTAR hence HISPEC/DESPEC, and (ii) help us passing our needs and wishes towards FAIR and/or providing information from FAIR. With FAIR in place and working towards the realization of the Modularized Start Version (MSV), also all experiments have to follow more strict (management) rules and regulations such as

- NUSTAR has to provide a Project Plan for the realization.
- In 2012, a Construction MoU (including cost!) has to be formulated.
- Risk assessments have to be put forward.
- The financial status and cost matrices of NUSTAR and all subprojects have to be updated and checked more regularly (see NUSTAR Resource Board).
- Spending profiles of the various funding agencies.

**The basis for many of these points are Technical Design Reports (TDR).**
**Not least because many of the funding agencies require (approved) TDRs for the release of (existing) in-kind contribution investments, it is of highest relevance to finish writing TDRs for the various HISPEC/DESPEC detector components AS SOON AS POSSIBLE, i.e. in 2012. Most of them are in an advanced draft status anyhow.**

The evaluation of TDRs had come to a full stop recently in conjunction with the change of FAIR Research Directors. A so-named Expert Committee Experiments (ECE) is being established at the moment, of which two members, possibly in conjunction with additional evaluators from outside FAIR, will judge the TDRs within a time frame of 2-3 months after submission. Until the ECE is in place later this year, ad-hoc committees will be put up to evaluate already submitted TDRs.

The CERN EDMS system is being used to upload and download documents relevant for NUSTAR and/or HISPEC/DESPEC. A mail will be sent on how to access this document server (cf. March 3rd!).

Namita has been preparing a NUSTAR (and HISPEC/DESPEC) website within the FAIR environment:
http://nustar.fair-center.eu
**NO COMPLAINTS but constructive feedback is requested from everybody to further improve the present version**, to be directed to N.Goel@gsi.de . Secondly, if there are any news, e.g. from milestones on detector R&D, provide this information for a 'NEWS Update'! Check in particular the link 'NUSTAR documents' and add missing publications, proceedings, documents, and, more importantly, **PhD and Masters theses related to PHD-SPEC!!**

## Low-energy branch building (LEB):

In 2011, fund raising has been done within NUSTAR to be able to have an architect assessment of the cost difference between the FAIR-proposed intermediate MSV solution for HISPEC/DESPEC and MATS/LASPEC and the full LEB building. Both the fund raising was somewhat delayed and the relevant architects loaded with getting the MSV version ready on time, hence this assessment has not yet been done in full glory. Nevertheless, the architects will be able to perform such an action within the coming two months such that an action can be taken towards the next FAIR Council Meeting end of June. Once we have the numbers, possible scenarios on how to find the money for the building have to be discussed prior to that meeting. **It is very clear that the money, ~4 MEUR must come from outside MSV funding!**
Scientifically, HISPEC and DESPEC agree with the MATS/LASPEC position that the intermediate MSV solution is basically a waste of money and resources, as the conditions are worse that at present in the FRS-S4 area. One should rather pursue experiments their and directly move into the LEB building under optimum “next generation” conditions.

## Election HISPEC/DESPEC Spokespersons:

Latest by the end of this year, the first 3-year term of the present
HISPEC (D. Rudolph and N. Pietralla) and
DESPEC (A.M. Bruce and M. Pfützner) spokespersons comes to an end.

In connection with the procedure of the election, the point was raised - and by and large positively received – to join HISPEC/DESPEC (also) on that level, not least because there is a large overlap in not only physics but infrastructure, detectors and EDAQ, etc. pp. It was agreed to run the process in three stages, all web-based, with those signed up in the revised 2012 HISPEC and DESPEC lists being eligible to vote.

Step 1 (until 30.4.2012):
Vote on administratively joining HISPEC and DESPEC (which could be implemented in the transition process from the current IMoU into the Construction MoU). Note that HISPEC/DESPEC is already considered one experiment within the FAIR project structure.
A: We leave HISPEC/DESPEC as it is, i.e. as two NUSTAR experiments each with elected spokesperson and deputy as well GSI/FAIR appointed contact and manager. This implies 2x4=8 names.
B: HISPEC/DESPEC remain two experiments, but the spokespersons are automatically their respective deputy (the same applies for GSI/FAIR contacts and managers). This implies 2x2=4 names.
C: HISPEC and DESPEC join to become one NUSTAR experiment with elected spokesperson and deputy as well GSI/FAIR appointed contact and manager. This implies 1x4=4 names.

Step 2 (until 30.6.2012):
Depending on step 1, nominations of (willing) spokespersons to N.Goel@gsi.de .

Step 3 (until 30.9.2012):
Voting on nominated candidates according to the results of step 1 and suggestions of step 2.

# AOB:

**Saudi-Arabia**, though unlikely to become a full FAIR member country, expresses interest in joining NUSTAR activities, including HISPEC/DESPEC experiments. Contacts can be established via Jürgen Gerl and/or via Nasser Alkhomashi, Khomashi@kacst.edu.sa .

The presentations of the meeting can be found, as usual, at Zsolt's HISPEC/ DESPEC page: http://personal.ph.surrey.ac.uk/~phs1zp/Home.html

# Timelines:

## PRESPEC to HISPEC/DESPEC:

PRESPEC marks the physics-driven transition from present GSI activities towards HISPEC/DESPEC at FAIR by smoothly integrating and employing prototypes or detectors aiming at HISPEC /DESPEC.

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|---|---|
| 2012-2013: | PRESPEC-AGATA in-beam campaign |
| 2014-Super-FRS commissioning: | PRESPEC decay campaign |
| ~2017-2018: | possibly new AGATA campaign at S4, pending AGATA schedule and LEB discussions/decisions/funding etc. |
| Super-FRS commissioning- : | DESPEC experiments at FAIR |

## PRESPEC-AGATA experiments 2012-2013:

The G-PAC 40 and by now also the GSI directorate has advised and approved some seven weeks of beam time (out of some 12 requested) for the PRESPEC-AGATA campaign in 2012. ALL these experiments should in fact run this year. The internal process underlying the selection of submitted proposals in 2011 was well received by the G-PAC and GSI management and has to be repeated in a similar fashion for the remaining beam time to be requested at the next G-PAC 41 meeting.

- Presentation of postponed, revised, and/or new proposal (ideas):
  **June 28-29, Orsay (right after EGAN workshop)**
  **Submission of extended LoI/draft: Early June (tba soon)**
- Feedback during meeting and the summer
- Second (pre-selection) meeting after first 2012 experiments
- Submission to G-PAC 41 (Dec. 2012 or Jan. 2012) approximately Nov. 2012.

## Super-FRS/Buncher:

John Winfield provided an updated and final proposal for the buncher & spectrometer, which is an anticipated in-kind contribution from India. The choice is a 3x 30 degree dipole solution with fewer but bigger magnets. The longer path length leads to better mass resolution but somewhat smaller acceptance. It will be a fixed 0-degree spectrometer. For more information see the presentation.

No specific requests were put forward towards HISPEC/DESPEC besides the wish for an advanced isomer tagger and fast timing/tracking detector coordination.

# TDRs and Detector R&D:

## HYDE:
TDR V1.0 to be ready by 9/2012. ASIC developments are time critical, while in-beam prototype detector module test are well on track.

## Internal H2-target:
PRESPEC tests 2011 successful. Does not need a TDR (at the moment) since until now thought to be French “outside MSV funding”. Nevertheless, the original cost book lists an active target for HISPEC … a technical report has to and will be written for G-PAC 41 for usage in 2013 with the PRESPEC-AGATA campaign.

## LYCCA diamond:
Based on earlier R&D, York has ordered a 6x6 $cm^2$ diamond TOF start detector to be positioned inside the AGATA target chamber. To be commissioned 2012 or 2013 in relation to fast-timing plastic TOF systems. LYCCA has an approved TDR.

## AIDA:
Is basically existing and has resubmitted the TDR via the revised FAIR channels. In-beam test required in 2012 due to UK funding cycle!

## FATIMA:
Ongoing experiments and tests with existing prototypes. A technical meeting including the defining steps towards a TDR is to happen in March 2012.

## TAS:
TDR will be submitted 3/2012.

## MONSTER:
Protoypes existing and basically working, likewise dedicated electronics.
TDR will be submitted 9/2012.

## BELEN:
Successful S4 experiments in 2011.
TDR in progress for 90 instead 44 counters. To be submitted in 2012.

## PLUNGER:
In-beam test in 2011 and results emerging.
TDR is drafted and to be submitted in 2012

## DESPEC-Ge:
Ongoing R&D and simulation work including planar and hexagonally-shaped, segmented detectors. A decision is to be taken by the end of 2012, TDR 2013.
RISING/EUROBALL Clusters, possibly repacked, remain a back-up solution.