# CANS meeting

- Discussion
  - Group 1 "low intensity science, testing"
    - A
      - Soft matter, imaging.
      - Strong contrast
      - Slow dynamics
      - ESS lighthouse proposals
    - B
      - Publishable science w 2 week experiment
      - Good S/N
      - Technical support
      - Scientific support/collaboration
      - Infrastructure
    - C
      - Demand essentially DK
      - ESS lighthouses 1 package
      - EU welcome - success criterion, collaborators
    - D
      - Investment: Private foundation
      - Running cost: DTU base funding
      - Longer term: Consortium
      - 1 beamline instr/instr
    - E
      - No real competetion
      - Collaboration w other CANS, ESS
    - F
      - Recommendation:
      - 2 cases cyclotron/ToF
      - 1-2 science cases
    - Q: ToF?
  - Group 2 "Training and Education, Instrumentation"
    - A
      - Hand-son operation including for undergrads
      - Test facility
        - Moderator dev
        - Imaging
        - Feasibility studies
      - Year-round flexibility
      - Bypass bureaucracy
    - B
      - ToF essential for NS
      - Sufficient flux @ sample, to make meaning ful exp < 1 day
      - Minimise activation levels
      - Possibility to re-configure instruments
      - Campus life/guesthouse
      - Data aq should be identical to ESS and instrument types should mimick
      - Dedicated permanent staff to train students
      - Sample environment (temp, pressure...)
    - C
      - ESS target: moderator test facility
      - Pre-experiment sample testing
      - Instrument component testing (optics, detectors)
      - Easy access for Data analysis / algorithmics
    - D
      - Investment: Private
      - ...
      - Running
        - Public
        - Research grants
        - EU...
    - E
      - ESS not competition
      - X-ray is
      - Anything lab based is (from a student perspective)
      - InvestmentS upport from major DK uni
    - F
      - Approach DK industry
      - Synergies isotopes and ns
      - Dev plan: which instrs first etc
      - Feasibility study [CDR] - pre seed...
    - Q:
      - BL: Education rather than training?
      - GM: ESS staff sent over? - Same infrastructure, environment, same difference
      - DB: Grad stud vs. postdoc difference
      - MS: These centers give good users
  - Group 3 "Industry and isotope production"
    - A
      - Industrial apps:
        - Materials analysis, SANS NAA radiography
        - Doping of Si material mods
        - LINX
          - Comments from HFPO
        - Tech development (acc, DF) proton buncher - CW -> pulsed
      - Isotope production
        - Medical (not Mo/Tc, Ge68, Acc225,...)
        - Other areas: industry, off-shore?
      - Neutron Activation analysis
        - Non-industrial: research on large samples?
        - Alternatives: PIXE, x-ray fluoresence
      - Additional points:
        - Scattering needs ToF
        - Factor of 10 compared to exsiting CANS
        - 1e12/cm2/s neutrons reqd for NAA +!
        - Optimisations for moderators and coupling to instrs
        - Other factors
        - Electronics: space and telecom
    - B
    - C
    - D
    - E
    - F
  - HFPO: Running costs DTU vs. other options??!?? 2 groups differed
    - JPLY: Ideas?
      - HFPO: National
        - KClausen:
          - Interst forum, institution buy-in
        - JPLY:
        - Kristoffer: FI is minus, uphill
          - industrial running cost not probable for science part
            - If successful facility ask oterh unis
        - Pape: Astid-II, only national funding for a few years, EU funding, most paid by Aarhus even > 0.5 non-aarhus
        - HFPO: Agreed kurt, has to be adressed
          - Host uni
          - Collaboration between uni leaderships
          - Rektors agree this is of national interest
        - BL: What does national mean?
        - HFPO: Shared cost
        - Mikael Jensen: Talks say wonderful ideas, stiff ceiling
          - must not be more expensive than...
          - What could be done with the same money at ESS
          - We can play around... Bureacracy
          - "ESS level without activation"
          - divergence between these
          - You can not have everything, impossible exercise
        - Günther: Have to disagree
          - LENS is a playground
          - At ESS heavy remote equipment
        - Dave: We're not trying to compete with ESS
          - Point is lots of interesting science can be done with less than ESS
        - Günther: Industry likes quick access
          - Proposal calls @ big facilities
            - 6 months deadtime
          - Bureacuracy @ CANS, but much less
          - Quicker access
          - Interested industry even funds access in JP
        - Kristoffer: Japan is a lot different than DK
          - Kurt had a 1.2% number for industry in Europe
        - Günther:
          - Lots of industry comes in through unis, 20%
        - Kristoffer: This will not provide funding
  - Esbe: Take money to ESS not viable
  - Kurt: 22 instrs @ ESS should be public, likely CRG's later
    - Markus: Contribution as in-kind vs. construction
      - Have not excluded CRG for later above 22+
        - NNBar openness to external funding
        - build instr on their own
        - No predefined case
        - But cannot be excluded
    - Kristoffer: What is possible at ESS should be considered
      - Intersting discussion wrt. Cyclotron vs. pulsed
    - HFPO: We don't have the numbers
    - Mikael: Simulations are needed S/N, soft sample CW etc.
      - Dramatical price tag increase CW->pulsed
        - Takes more power
        - Linac expensive
        - Are there crossovers somewhere
        - Pulse may be neeeded
        - Medical facility makes this inviable
        - Subtopic 6
      - Markus: Imaging + CW may be possible
        - Science case
      - Günther:
        - Science case assumes that Science is main
      - Markus: OK then use case/business case
        - We assumed a scientific driver
      - Günther:
        - $ spent better here or there driven hard by saying "science"
        - Getting priorities straight is important
      - Kell: Calculation scenarios need to be covered separately
      - Bent: This is why ws was split in 3
      - Kristoffer: Peak flux does not matter S/N does
        - Need to think about this
        - Gains in reducing bg
      - Pape: Pulsed more expensive than DC
        - Accumulator ring with cyclotron
        - compressor ring...
      - Bent: Different price tags on linacs
      - Pape: acc ring could be cheaper
      - Mikael: noone build 30MeV for 30 years
        - Pape: Astrid...? :-)
      - JPLY: compressor is an upgrade path?
      - Pape: yes certainly
        - One could do "easy" costing
          - Poor mans accumulator
            - 1000 turns
      - Kristoffer SANS does not need short short pulse - easier?
      - Pape/Kurt: No, bigger ring needed :-)
  - Bent:
    - Did we invite the right people?
    - Participation good
    - Please let us know if we missed someone?
    - Other comments?
    - Close WS
    - Thank you for active participation
    - Reports needed this year
      - Qualitative OK
      - Recommendations for future process
    - Pape: Very few threats or revenues to hand other members
      - Bent: sure you are goood at that ;-)