Innovation Themes SESTI

http://www.tno-projects.pqa.nl/sesti/wiki/index.php

- ICT/Robotics
  - ICT/Media
    - Automatic analysis of video surveillance data poses questions about privacy and security
    - Will quantum computer replace current digital computers?
    - User-generated content sites step in line with established media
  - AI/Robots
    - Robots are getting increasingly interactive and smarter
    - Military robots are reality and lead to ethical controversies
    - What will improved automated translation technologies mean for translators and language culture?
    - Will future AI-based expert systems and answer engines compete with human experts?
    - How close are we to real strong AI / Artificial General Intelligence (AGI?)
  - Neuro-ICT
    - Can parts of the brain be replaced by computer technologies and microchips?
    - What will the improving neuroscience and technologies lead to?
- Other
  - Self-assembling technologies could revolutionise manufacturing and production
  - Genetic and nanoart on the rise
  - Researchers call for more support for basic research in synthetic biology workshop
  - Will self-assembly be the future of manufacturing and production?
  - Cheap rapid prototyping enables home-made manufacturing
  - Will in-vitro meat make animal farming obsolete?
- Energy Technologies
  - Energy production
    - Will algae be the fuel of tomorrow?
    - New ways of hydrogen production as basis for hydrogen economy?
    - Solar energy technology gets increasingly perfected
    - Will our future fuel come from food leftovers?
    - Interest and progress in nuclear fusion research grows
    - Will our future energy come from artificial photosynthesis?
    - Interest grows in small nuclear reactors
    - Space-based solar technology gets interest from US and Japan
    - Comeback or fade-out of nuclear fission reactors?
  - Energy Management
    - Energy efficiency becomes a new dimension for microchip technology
    - AI-based programs can help making energy distribution and consumption more efficient
    - Negawatt homes that produce more energy than they consume could impact energy companies
    - Biomimetics emerges as new field for advanced engineering
    - Smaller, integrated and long lasting batteries open new ways for mobile technology innovations
    - Different countries plan to develop carbon-neutral cities
- Health and medical research
  - Therapies & Medication
    - Business already discovers the commercialisation of stem cell technologies
    - Nootropics could open up new business field for the pharma industry
    - Emergence of Do-It-Yourself biology could impact the pharma industry and security
    - Gene therapy gets closer to reality
    - Advances in neuroscience could counter age-related neurodegenerative diseases and the amount of people in need of care
    - Tissue engineering and lab grown organs could replace foreign organ transplants in the future
    - Human Enhancement Technologies could become reality in the mid-term future and raise questions about human identity, equity and health
    - Advanced prosthetics and implants already leads to real cyborgs
    - Robots for care, cure and therapy pose new opportunities and challenges
    - Robotics and prosthetics are getting closer
    - Bio-business on the rise
    - Non-profit and DIY groups are actively involved in anti-aging research
    - Will rising DIY research compete with professionalised R&D?