Agenda Cyber Citizen 2020

Here comes the Cybizen? –
« How to mutate from a Cyborg to a Cyber Citizen? »
a Remake after half a Century has passed!

ACM/GI RG BB & EU Club R2GS
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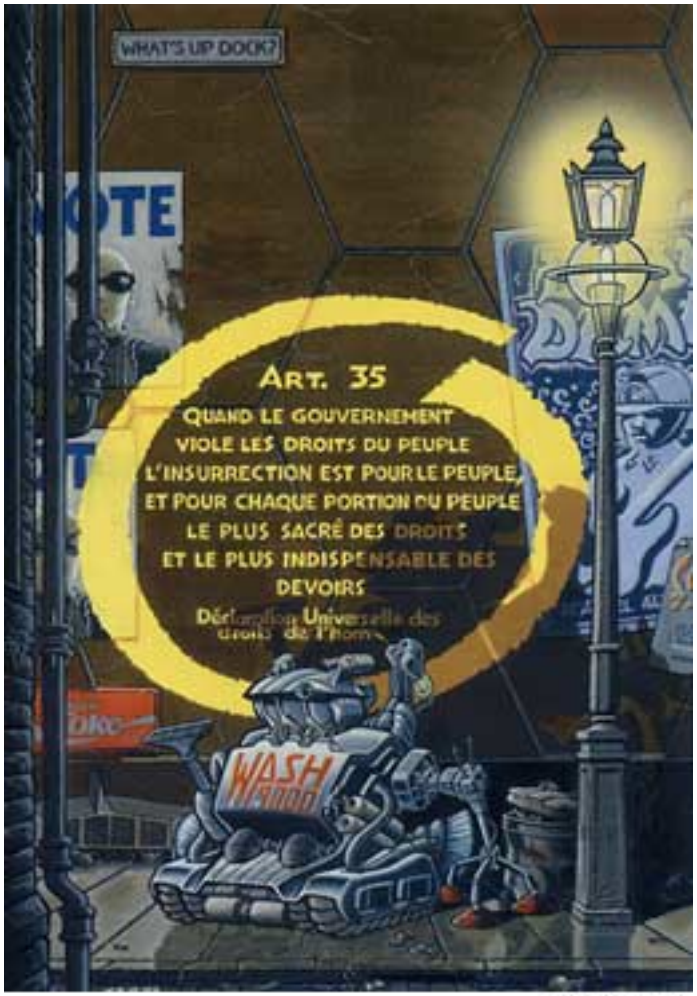
German Chapter of the ACM (Past Co-Chair of Board of Directors)

Speaker of GI/ACM Regional Group Berlin-Brandenburg

- „Cyborgs and Space“ [M.E.Clynes, N.S.Kline Sept.1960]
  - „Space travel challenges mankind not only technologically but also spiritually ...“
  - „Scientific advances ... may ... permit man‘s existence in environments which differ radically from those provided by nature...“
- yesterday’s Fictional Systems → Bi-lateral Hybrid of Man &Technology [Cyborg 1972] → [Oblivion 2077]
- to-day’s Eternal Systems → Multi-lateral Hybrid of Man (Citizen) & Global Systems (e.g. power supply infrastructure) & Technology [Smart Grid 2012]

Agenda Cyber Citizen 2020
Figures from « Robotik und kybernetische Kreaturen (cybernetic creatures)



Jeam Tag

Philippe Jozelon

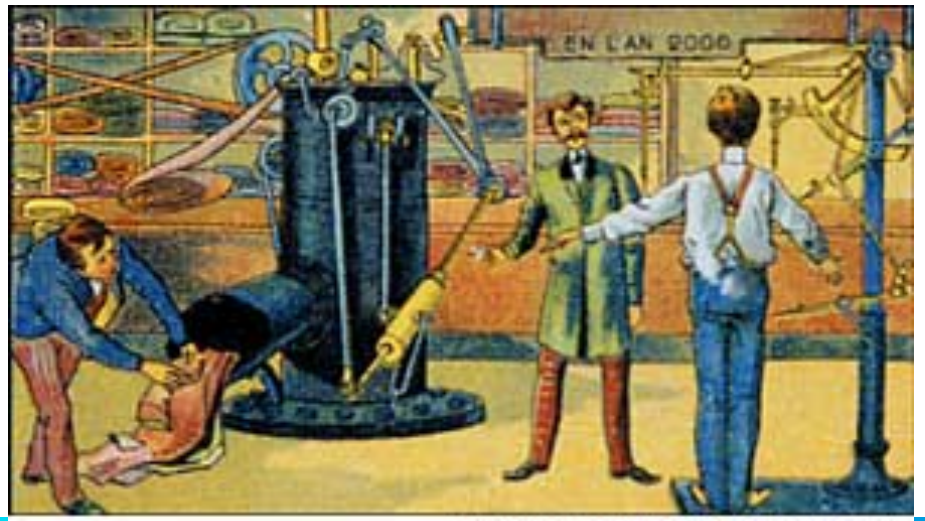
- Hybrid of Man and Technology [Cyborg 1972]
  - Devices to amplify Man‘s (visual) faculties

- „Visor“ of Star Treck „Next Generation“ is able to see infrared spectrum – allows him far-distance observations

- „Body of Glass“ [Marge Piercy 1991] implant chronometers to man‘s bodies to allow man‘s time synchronization

- Virtual Reality here means
  - man‘s Soul resp. Consciousness transforms to a Virtual Body
  - „Participant-Evolution“ is a vision of letting consciousnesses travel instead of travelling of bodies

- Hybrid of Man &Technology [Cyborg 1972]
  - self-reproductive Machines „Time Ships“ reproduce themselves on arrival on a star – like Computer Virus – to explore Galaxies
  - to need *n* Generations of Time Ships for 2^n star explorations in foreign galaxies



Vignette Viellemard, 1901

- Hybrid of Man &Technology [Cyborg 1972]

  - Artificial Intelligence Machines (AIM) finally form an independent but closed community that eventually fight mankind to earn control of the universe

  - to avoid → 3 Laws of Safety by Isaac Asimov:
    1. An AIM is not allowed to and, himself does not allow to hurt man
    2. An AIM must execute orders of man, provided law 1 is not violated
    3. An AIM must himself fortify provided both, law 1 and law 2 are not violated

- [Oblivion 2013 Bilder] http://www.sueddeutsche.de/kultur/oblivion-im-kino-der-letzte-raeumt-die-traumata-weg-1.1645898
- [Oblivion 2077 Wiki] http://de.wikipedia.org/wiki/Oblivion_(Film)
  - is a "Post-Apocalyptic" Scenario: just Technologies and some cloned Technicians resisted to the apocalyptic world war;
  - technology is good for everything: to attack, to defend, to resist and to survive in a volatile environment;
  - Jack the Human Hero, gets "good memories/advices" of "Prior-Apocalyptic" Scenarios (The Oblivion) from his Unconsciousness and, consequently fights against the (bad alien) "pillagers" and saves (good female) Humans;
  - Survived Human Beings are stealthy by Technology to the bad pillagers.

(Cyber) Citizen History

- Till 20th Century, Court Yards did not accept to prove contractual content, because this would be in contradiction to make freely contracts
- In 1995 the Legislative has invented and made the content provable to duties [EG Richtlinie 93/13]
- To-day, did world become different by something like „Digital Revolution“ – “Smart Revolution” - “Higher Intelligence” e.g. by [Peter van Made 2013]?

Go Trusted Cybizen – Make Assertions, Show Evidence, Get Affirmation!

- Distributed Services [CSA CCM, CADF RM,ENISA SGSM]
- to achieve Trustworthiness e.g. from Cloud/Grid Computing

- NCRSDI Resources must be federated – their use must be indicated:
  - Networks – Bandwidth - Delays
  - Computing - CPU Capacities
  - Routing
  - Storage
  - Data
  - Information

- Distributed Services (Transparencies, SoA) to be implemented

Ethics of Cyber Citizens [Horizon2020]

- Citizens do not get Ethic Advices/Authorization from some hazy Unconsciousness – but from themselves
- Citizens request
  - for themselves Human & Civil rights
  - and grant h‘n c rights to others
- Citizens get granted access
  - to available technology infrastructure
  - from state but not from provider organizations
- Citizens are skilled/educated –
  - not necessarily in technology functionalities
  - but necessarily in technology responsibilities

- Ethics of Cyber Citizens [Horizon2020]
- Stakeholder Model is a Rights‘n Responsibility Model
  - to plan our lifes
  - to make economic investments
  - to guarantee prosperity and freedom
  - to promote growth and employment
  - to enhance competitiveness
    - to close gap between research & market
    - to ensure involvement of SMEs
    - to respond rapidly to current needs
    - to enhance international cooperation

Ethics of Cyber Citizens [Horizon2020]

- Stakeholder Model is a Security‘n Safety Model
  - capabilities needed to ensure Security‘n Safety of citizens
    - from threats
    - from national desasters and crime
  - while respecting fundamental human rights and pricacy [EU FP7 WP2013 theme 10 security]
    - to ensure concerted use of available technology
    - to stimulate cooperation of providers and users
    - to improve competitiveness of EU Security Industrie
    - to deliver mission-oriented results to reduce security gapgs

Ethics of Cyber Citizens [Horizon2020]

- Stakeholder Technology (EtSy) Model
  - [*EU Stockholm Programme* –
  - *Europe 2020 Strategy* –
  - *Innovation Union*]

- Transport EtSy
- Health EtSy
- Civil Protection EtSy
- Energy EtSy
- Development & Environment EtSy

- Ethics of Cyber Citizens [Horizon2020]
- [Eu Security Advisory Board ESRAB]

- Privacy and Civil Liberties - fundamental rights
  - to protect personal data
  - to comply with EU Law

- Civil Application
  - co-operation of national/international actors
  - to be complementary with EU Initiatives
    - to enforce laws
    - to combat/prevent crime/terrorism
    - to support R&D on methodologies, technologies

- Ethics of Cyber Citizens [Horizon2020]
- *[EU Security Advisory Board ESRAB]*
- *[EU Security Research and Innovation Rorum ESRIF]*

- Missions to safeguard security
  1. to secure citizens
  2. to secure infrastructures and utilities
  3. to survey intelligently and to secure borders
  4. to restore security and safety in case of crises
  5. to evaluate integration, interconnectivity, interoperability of security capabilities
  6. to harmonize security and society
  7. to co-ordinate and structure R&D on Security

- Ethics of Cyber Citizens [Horizon2020]
- Routes to meet Security Objectives:
  - Capabilities → Integration → Demonstration → Mission

- Security of Citizens [FP7-SEC-Act10.1]
  - threat aspects of potential incidents, such as
    - to „understand“ offenders, equipment, resources, mechanisms of attacks
    - to provide capabilities to identify – prevent – prepare – respond
    - both to avoid incident – to mitigate potential consequences

Ethics of Cyber Citizens [Horizon2020]

1. Serious Organized Economic Crime [SEC-2013.1.1-1]
2. stronger identity for EU Citizens [SEC-2013.1.1-2]
3. smart clothing for law enforcementers [SEC-2013.1.4-1]
4. EU Common Framework of technology application in use of evidence (Beweismittel) [SEC-2013.1.4-2]
5. protection of Smart Grids against Cyber Attacks [SEC-2013.2.2-3]
6. Security Measures applied to energy production and distribution [SEC-2013.2.2-4]
7. Logistics and Supply Chain Security [SEC-2013.2.4-1]
8. Cyber Crime and Terrorism Agenda [SEC-2013.2.5-1]

Ethics of Cyber Citizens [Horizon2020]

4. EU Common Framework of technology application in use of evidence (Beweismittel) [SEC-2013.1.4-2]
   - **L**aw **E**nforcement **A**gencies are able to obtain evidence in effective technological ways
   - Admission in Court of Evidence obtained technologically is frequently uncertain → uneven application of law
   - when criminals become aware of **I**nformation **G**athering **T**echnologies they can adopt countermeasures → absence of protecting standards and regulations
   - to share and accept evidence globally by law enforcement and judiciary systems – while simultanesously observe fundamental rights and procedural safeguards → lack of legislation and standards at international level

Ethics of Cyber Citizens [Horizon2020]

4. EU Common Framework of technology application in use of evidence (Beweismittel) [SEC-2013.1.4-2]
   - coordinated & coherent activities are required by legislative standardization – technology – enforcement stakeholders, including
     1. comparative analysis of legal provisions
     2. identification of legislative changes
     3. definition of open standards, assuring international transfer of evidence, chain-of-custody, protecting of means of proof, without forgetting ethical + privacy rights
     4. Operational + Ethical implications for LEAs
     5. identification of measures/indicators to sustain security-by-technology

Ethics of Cyber Citizens [Horizon2020]

8. Cyber Crime and Terrorism Agenda [SEC-2013.2.5-1]

- to enhance surveillance of Cyber Crime
  - to ensure Security of Citizen and Critical Infrastructure
  - to understand economic impacts of Cyber Crime in non-ICT sectors

- Ethics of Cyber Citizens [Horizon2020]
- Security of Infrastructures & Utilities [FP7-SEC-Act10.2]
  - target aspects of potential incidents, i.e. to avoid incidents to mitigate consequences, assessing vulnerabilities & securing critical infrastructure, including
    - large-scaled event sites
    - significant sites of political or symbolic value
    - utilities for energy, transportation, communication, finance, public health care etc.
    - government asset protection
    - impact of extreme weather conditions on ciritical infrastructure
    - Energy- Transport- Communication Grids

- Ethics of Cyber Citizens [Horizon2020]
- Cost-effective Security Measures applied to distributed energy production & distribution [FP7-SEC-2013.2.2-4]
  - to-day there are no cost-effective security systems for Wide Area Grid Protection → Smart Grid are vulnerable to attacks
  - Widely Distributed Energy Generators need to help operators to operate their networks, e.g. by volage control, reactive power support → risks and threats related to SGArchitectures
  - ...