Advisory Committee of the Human Rights Council
Questionnaire on new and emerging digital technologies and human rights [i]

This answer is submitted by AGE Platform Europe, the largest EU network of organisations directly representing some 40 million older persons. The answer provided here has been drafted based on consultation of some of AGE experts in the field of new technologies and human rights, existing AGE positions and policy papers and desk research, taking due account of human rights standards as they apply to older persons. This submission therefore aims to reflect the challenges and opportunities of new and emerging technologies from an older persons' perspective. Although new and emerging technologies are likely to have an impact across various fields, this contribution primarily focuses on technologies that are used for the care and support of older persons.

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Core questions (for all stakeholders)

1. *In what ways do new and emerging digital technologies help to protect and promote human rights? How can the positive benefits of these technologies be realized?*

Emerging technologies, such as assistive devices, built-in environmental applications, robotics and artificial intelligence (AI) hold a promise to enhance and improve older adults' health, wellbeing as well as ageing in place[1]. These types of solutions are considered as a cost-effective approach to facilitate independent living and improve quality of life of older persons whilst dealing with the increasing demand for care. Due to the shortages in care personnel and the persistent economic constraints faced by countries all over the world, such technologies are increasingly used for the care and support of older persons. For example, robots and assistive technologies can be used to help older people perform daily tasks including - but not limited to - bringing food or medication, feeding, lifting from beds/floor, cleaning the house, helping people to bathe or go to the toilet, and serving as a memory aid regarding daily schedule and uptake of medication. They can also monitor older people and summon help and/or intervene in case of emergency, for example they can detect smoke, water, gas emission, activity/inactivity and even falls. They can prevent safety hazards by automatically locking/unlocking doors and switching off kitchen appliances when left on without supervision.

In addition, 'telehealth' applications are geared towards managing chronic conditions (such as heart and lung disease, diabetes, etc), through monitoring vital signs and symptoms in order to avoid hospitalisation and facilitate early intervention[2]. Emerging technologies also include medical robots, ICT, virtual reality and artificial intelligence used in diagnosis, surgery,

[1] World Health Organisation. Assistive devices and technologies [Internet]. 2015; Peek STM, Wouters EJM, van Hoof J, Luijkx KG, Boeije HR, Vrijhoef HJM. Factors influencing acceptance of technology for aging in place: a systematic review. Int J Med Inform [Internet]. 2014 Apr;83(4):235–48.
[2] Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195.

rehabilitation (ex. serious gaming for brain recovery or Parkinsons disease[3]) and prosthetics (ex. Exoskeletons). Companion robots have been used in various settings to improve the user's health and psychological well-being[4]. There are also several technologies that aim to maintain or improve older people's cognitive and functional status by offering mental or physical trainings and monitoring the progress of each individual[5].

Emerging technologies can also enable equality in participation in all everyday life domains by compensating for impairments and health related challenges with daily activities[6]. They can help prevent isolation and social exclusion[7]. For example, remote telepresence robots (which combine video conferencing with mobile robots) and companion-type robots are increasingly used as ways to enhance social interaction especially for older people living alone and those living in remote/rural areas[8]. Other technologies are used to stimulate communication and activities between people, as well as help them to increase their social network and expand opportunities for connection[9]. Virtual visits could reduce the problems caused by distance and may even improve the quality of interaction since individuals can see the home environments of the people they are conversing with and also minimize background noise for those with hearing difficulties[10]. Assistive devices may moreover offer personalised alternative communication solutions, minimize any linguistic or cultural barriers and even help people build communication skills[11]. Autonomous cars could help older people who are not able to drive - due to physical or cognitive weakness or due to age limits for the renewal of driving licenses – avoid isolation and facilitate participation in public and social life.

These various applications can therefore contribute to the realization of human rights of older persons, in particular by promoting autonomy, independence, personal mobility, physical and mental health, social inclusion, safety and physical integrity. They may also help avoid institutionalization as well as abuse and neglect to the extent that they can fill gaps in the provision of care[12].

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[3] See for example: https://ec.europa.eu/digital-single-market/en/content/rgs-reaching-out-brain-recovery-through-serious-gaming and http://www.i-prognosis.eu

[4] Flandorfer, P. (2012). Population Ageing and Socially Assistive Robots for Elderly Persons: The Importance of Sociodemographic Factors for User Acceptance. *International Journal of Population Research, 2012*.

[5] https://www.euronews.com/2019/09/23/are-videogames-the-future-of-parkinson-s-disease-diagnosis

[6] Wolbring G, Lashewicz B. Home Care Technology Through an Ability Expectation Lens. J Med Internet Res [Internet]. 2014;16(6):1. e

[7] Siegel C, Dorner TE. Information technologies for active and assisted living-Influences to the quality of life of an ageing society. Int J Med Inform [Internet]. 2017;100:32–45.

[8] Baisch, S., Kolling, T., Schall, A., Rühl, S., Selic, S., Kim, Z., et al. (2017). Acceptance of Social Robots by Elder People: Does Psychosocial Functioning Matter? *International Journal of Social Robotics, 9*(2), 293-307.

[9] Gelderblom, G. J., Bedaf, S., & de Witte, L. (2012). *ACCOMPANY DELIVERABLE 1.1 Status of elderly care in Europe and the potential for service robotics*.

[10] Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195.

[11] Ibid.

[12] Kornfeld-Matte R,. Report of the Independent Expert on the Enjoyment of All Human Rights by Older Persons on her mission to Georgia [Internet]. Geneva; 2018.

To ensure full enjoyment of the positive benefits of emerging technologies age-friendly environments embracing universal and participatory design strategies are needed. The design process should take due account of the heterogeneity of older persons in terms of capacities, preferences and expectations. Users should be included in the design and development of new and emerging technologies and robotics. They should have an active role in this process as co-designers and not merely as testers. In addition, users and their representative organisations must be included in all aspects of decision-making about the introduction of technologies through public policies, including design, provision and monitoring. Human rights impact assessments should be applied from the design to the planning and implementation of new and emerging technologies. Manufactures, procurers and suppliers (including State actors) should make ex ante evaluations that will inform decision-making, address human rights concerns and ensure compliance with international standards. Human rights impact assessments must be an obligation before the development and introduction of any type of technology. They should take due account of the system functionalities but also of the user's personal circumstances and needs. They must build on the human rights principles of dignity, autonomy, equality and non-discrimination and participation and inclusion. If new and emerging technologies do not comply with this principles they are prone to human rights breaches and should therefore not be implemented. Finally, societal barries, including legal, attitudinal and physical barriers that hinder equal participation of older people in society have to be removed.

2. *What are some of the key human rights challenges arising from new and emerging digital technologies? How can these risks be mitigated? Do new and emerging digital technologies create unique and unprecedented challenges or are there earlier precedents that help us understand the issue area?*

While digital technology offers many exciting new possibilities such as those aforementioned, not enough is known about their actual implementation and implications. The nature of these rapid developments means that technology is constantly changing, often before there is a real possibility to assess its actual impact. New and emerging technologies therefore both amplify the general challenges related to other forms of technologies, but may also create additional unique challenges precisely because legal and policy frameworks have not caught up with the rapid technological developments and the complexities related to their combined and intense use.

Equal treatment

There is some evidence that automated decision-making may be reproducing and amplifying human bias ; as a result machines can be discriminating against some people [13]. For example, automated algorithms used by public bodies in relation to eligibility, risk assessment and allocation of resources, could exclude older persons from allocations or treatment on the basis of their age or health status. Similarly, when automated decision making is used by banks or insurance providers, older persons may be automatically denied some goods or services on the basis of their age. Moreover, some individuals or groups could suffer a disparate effect in case a

[13] See for example Allen, R., & Masters, D. (2019). Artificial Intelligence: the right to protection from discrimination caused by algorithms, machine learning and automated decision-making. In *ERA Forum* (pp. 1-14). Springer Berlin Heidelberg., also https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing; https://www.theguardian.com/technology/2016/apr/08/facial-recognition-technology-racial-bias-police

machine learning algorithm identifies certain patterns that may have medical or legal outcomes. For example, a technology that is able to detect early signs of Alzheimer could on the one hand, be critical to ensure early interventions. On the other hand, if it is misused, it can stigmatize older people or become overly medicalized offering mainly health-related services to the users, even if they are not willing to be confronted with such problems on a daily basis, especially if they show no visible symptoms. Moreover, if based on such an analysis machines are able to categorize a case of a person with early signs of dementia as 'atypical', this may lead to differential treatment by their caregiver, family, insurance company or even employer depending on whom this information is shared with. So to the extent that datasets and algorithms introduced in social security decision-making, medical diagnosis but also other areas of older people's lives, there should be an assessment of how such automated decision-making can impact the equal treatment of the older person. Moreover, one of the key challenges is to create a system by which individuals are able to understand how decisions are made for them and to identify discriminatory behaviours.[14] Auditing machine decisions is also considered necessary to avoid discriminatory treatment[15].

An additional risk of discrimination is that all members of society cannot equally profit from the technological advancement. Although, older persons are a heterogeneous group, a considerably great number of older individuals remain less actively engaged in the use of some emerging technologies in comparison to younger adults[16]. Lack of education, experience and digital skills as well lack of information about their use, availability, benefits, risks and usefulness adversely affect the use of new technologies by older persons. Lack of accessibility as well as ease of use and design are other important barriers[17]. The cost of technology is another critical factor in its acceptance by users[18]. Many older persons are unable to afford technologies that could otherwise improve their health and wellbeing. The costs include the acquisition and maintenance of technology, but also related costs such as electricity, internet and technical assistance.

Moreover, older persons are more likely to hold negative attitudes toward the technology, including for instance lack of confidence, fear of stigmatization and concerns about privacy and

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[14] Allen, R., & Masters, D. (2019). Artificial Intelligence: the right to protection from discrimination caused by algorithms, machine learning and automated decision-making. In *ERA Forum* (pp. 1-14). Springer Berlin Heidelberg.,

[15] See Sample, I. (2017, 27 January 2017). AI watchdog needed to regulate automated decision making, say experts. *The Guardian*. Retrieved from https://www.theguardian.com/technology/2017/jan/27/ai-artificial-intelligence-watchdog-needed-to-prevent-discriminatory-automated-decisions

[16] Fang ML, Canham SL, Battersby L, Sixsmith J, Wada M, Sixsmith A. Exploring Privilege in the Digital Divide: Implications for Theory, Policy, and Practice. Gerontologist [Internet]. 2019;59(1):e1–15. ; Czaja SJ, Charness N, Fisk AD, Hertzog C, Nair SN, Rogers WA, et al. Factors predicting the use of technology: findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE). Psychol Aging [Internet]. 2006 Jun;21(2):333–52. ; Europäische Komission. Bevölkerungsvorausschätzungen [Internet]. Projizierte Bevölkerung. 2013

[17] Hedman A, Kottorp A, Nygård L. Patterns of everyday technology use and activity involvement in mild cognitive impairment: a five-year follow-up study. Aging Ment Heal [Internet]. 2018;22(5):603–10.

[18] Peek, S. T. M., Wouters, E. J. M., van Hoof, J., Luijkx, K. G., Boeije, H. R., & Vrijhoef, H. J. M. (2014). Factors influencing acceptance of technology for aging in place: A systematic review *international Journal of Medical Informatics, 83*, 235-248.

safety that impeded its adoption[19]. Little attention has been drawn to the potentially harmful internalization of negative stereotypes about older adults in the context of emerging technologies. Deeply rooted ageist assumptions, devaluing older individuals as technophobic, unwilling and unable to use and learn to use new technology may be detrimental, and along with other mentioned barriers, could be an alternative explanation for decreased participation in the emerging technological landscape[20]. For example, older people may perceive themselves as too old to learn and believe that such technology is best suited for younger people. Additionaly, technological solutions that target the old can be stigmatizing technologies and thus impede their uptake[21]. Products targeting the so-called "silver economy" may deepen the stereotypisation of older persons as incompetent to use technologies available to the general public. Assistive technology and robotics labelled 'senior-friendly' or perceived as relevant only for the older population also risk categorising older people in relation to their poor health, reduced mobility or increased need for care. Surveillance technologies, such as tagging bracelets impose a view of older persons as needing control and restraint[22]. For example, wearing a personal alarm button has been described like wearing a "*badge of dishonor*"[23].

Most people think that the digital gap will decrease in the future as the younger tech-savvy generations grow older. Yet, this fallacy has been proven wrong, and researchers warn, like on a moving staircase, some people will always stay back and be disadvantaged in accessing the latest technologies as these are exponentially expanding and changing[24]. To mitigate the risk of inequality in access to new and emerging technologies lifelong learning including tailored trainings in digital literacy can enhance digital technology adoption and promote equal participation[25]. Targeted training for older persons may be needed to address the digital divide

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[19] Helsper EJ, Reisdorf BC. A Quantitative Examination of Explanations for Reasons for Internet Nonuse. CyberPsychology, Behav Soc Netw [Internet]. 2013 Feb;16(2):94–9.; Peacock SE, Künemund H. Senior citizens and Internet technology: Reasons and correlates of access versus non-access in a European comparative perspective. Eur J Ageing [Internet]. 2007 Oct 26;4(4):191–200.

[20] Neves B, Amaro F. Too Old For Technology? How The Elderly Of Lisbon Use And Perceive ICT. J Community Informatics [Internet]. 2012 Mar 8;8(1 SE-Articles). ; Hauk N, Hüffmeier J, Krumm S. Ready to be a Silver Surfer? A Meta-analysis on the Relationship Between Chronological Age and Technology Acceptance. Comput Human Behav. 2018;84:304–19.

[21] Hudson, J., Orviska, M., & Hunady, J. (2016). People's Attitudes to Robots in Caring for the Elderly. *International Journal of Social Robotics*, 1-12, Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195, Yusif, S., Soar, J., & Hafeez-Baig, A. (2016). Older people, assistive technologies, and the barriers to adoption: A systematic review. *International journal of medical informatics, 94*, 112-116

[22] Astell, A. (2006). Technology and personhood in dementia care. *Quality in Ageing and Older Adults, 7*(1), 15-25.

[23] See Peek, S. T. M., Wouters, E. J. M., van Hoof, J., Luijkx, K. G., Boeije, H. R., & Vrijhoef, H. J. M. (2014). Factors influencing acceptance of technology for aging in place: A systematic review *international Journal of Medical Informatics, 83*, 235-248.

[24] Hauk, N., Hüffmeier, J., & Krumm, S. (2018). Ready to be a silver surfer? A meta-analysis on the relationship between chronological age and technology acceptance. Computers in Human Behavior, 84, 304-319.

[25] Czaja SJ, Boot WR, Charness N, Rogers WA, Sharit J. Improving Social Support for Older Adults Through Technology: Findings From the PRISM Randomized Controlled Trial. Gerontologist [Internet]. 2018;58(3):467–77; Mcdonough CC, Kingsley D. The Impact of Mobile Broadband on the Digital Divide Affecting Older Adults. Int Telecommun Policy Rev [Internet]. 2015;22(2):27–42; Larsson E, Larsson-lund M, Nilsson I, Larsson-lund M, Nilsson I. Internet Based Activities (IBAs): Seniors ' Experiences of the Conditions Required for the Performance of and the Influence of these Conditions on their Own Participation in Society Internet Based Activities (IBAs): Seniors '

but also to cover specific learning needs and expectations of older persons. In addition, technology literacy should be improved so that everyone is able to understand and evaluate the benefits and risks of technology and engage in relevant discussions. To improve uptake, access to information about the availability of such technologies but also support (including technical assistance) for its use is crucial. Moreover, equal access presupposes the accessibility of the technologies. Universal design is intertwined with the right to equality and non-discrimination, since it is the gateway through which everyone can participate fully and equally in society. States should therefore provide minimum standards of accessibility. Furthermore, to avoid inequality, States should offer access to assistive technologies as part of social protection[26].

Autonomy

Because, as mentioned earlier, new and emerging technologies are widely considered as a solution to the increased care needs and expenses of an ageing population, there is a growing risk that older persons will not have a choice to opt out from the use of such technologies in their everyday life, due to lack of alternatives and pressure or coercion. New and emerging technologies should be an *additional* layer to human work support, which is necessary for everyone's dignity and social wellbeing. They should be available alongside qualified human caregivers who will train users, follow-up on the implementation of technologies, assist them with activities of daily living and provide emotional support. Assistance given to older persons must be comprehensive and seamless covering all aspects of life and diverse needs of older persons, including in end-of-life and palliative care situations. Older persons should retain control over the type of support they receive, including the right to refuse the use of assistive technologies and robotics. Technologies should not be introduced as a form of support without the free and informed consent of the individual in question. Individuals should be able to choose from a wide range of options how, where and when they wish to receive care and support. If this is not the case, then a breach of the right to independent living, ie the right to retain control over living arrangements and support is at stake[27].

Technologies which can make automated decisions, bring about further questions, with regard to retaining control over daily activities. In principle technology is a powerful means of personalised services. For example, instead of being forced to eat meals at certain times which are convenient for caregivers, the system may learn from the user and adapt to their preferences[28]. On the contrary, if the technology is programmed in such a way that does not take due account of the preferences of the older person, their routine and/or cannot accommodate unexpected visits and change of programme, then it replicates an institutional setting where individuals are subject to strict routines and lack the right to make autonomous choices about their daily life.

Experiences of the Condit. 2013;1277(November 2015).

[26] Human Rights Council (11---29 September 2017)Report of the Independent Expert on the enjoyment of all human rights by older persons

[27] Art 19 UNCRPD

[28] Human Rights Council (11---29 September 2017)Report of the Independent Expert on the enjoyment of all human rights by older persons

A related concern is whom is technology supposed to serve and what happens in case of conflicting instructions. This is particularly important because in the in the context of care, technologies are often developed to alleviate the burden of caregivers and may even be introduced at the request of the staff or the family as opposed to the older person. For example, in case the system is programmed to follow an activity and dietary plan provided by a medical doctor, should it obey the wish of the older person who may want to drink alcohol or refuse to take a prescribed medicine? In other words, can technology coerce older people to adhere to a regime despite their wish not to comply with it? How can the system decide between the long-term goal of good health and independence and the short-term choice of the older person in question? To respect individual autonomy, we need to allow people to deviate from what is expected of them, to the same extent that we allow other people who don't need support to make such choices.

Additionally, the system may comply with the wishes of the user but at the same time signal the 'wrong doing' /deviation to other actors, such as their family, health care team or even insurance company. In addition to raising questions about privacy and data protection, such technology violates the autonomy of the older person insofar as it puts pressure on the individual to act in a certain way or they will have to deal with the consequences, such as shame vis-à-vis their family or even reduced coverage of health care costs due to their behaviour. Here a decision needs to be made about the role of technology in terms of enabling vs. policing the activities of the older individual. However, there are also good practices that can augment cognition and allow the user to make choices and lead the interactions (ex. CIRCA system). Such systems can be tailored to the individual's circumstances and preferences and can also ensure the right of the user 'to be left alone'[29].

These are complex questions because even if we agree that autonomy needs to remain the organising principle of technology in some cases it may be in conflict with other rights. For instance, the user's refusal to collaborate with the robot and/or comply with a certain routine may lead to loss of mobility and independence. Such outcome is in contrast with the interest of caregivers and public health and social protection systems. Concretely, becoming more dependent on others involves fewer choices for those providing care, especially for informal caregivers. Should then autonomy be limited when it involves more burden on others to provide support?[30] The purpose of technology and the conditions upon it is being implemented may help define the extent to which other concerns can overrule autonomy. For example, *"if the robot is placed by competent authorities (the social or health care system) in the home of the elderly*

[29] Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195.; Astell, A. (2006). Technology and personhood in dementia care. *Quality in Ageing and Older Adults, 7*(1), 15-25.

[30] Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195. p.194: "Perhaps the framework needs to reduce the value of autonomy in interactions with the older person the more other people have their choices reduced by their caring role. Concretely, this
might mean that the ability of the older person to judge and take risks that could lead to injury and greater dependence might be restricted the more dependent they are on others. It might also justify more monitoring and more reporting to carers".

person on the condition that safety risks be reported, and the user agrees to this, then that may be a reason for the robot to summon help even if the user objects". [31] But as machine learning becomes more sophisticated issues of autonomy need to be integrated in the design, planning and implementation of the systems.

Participation and inclusion

In the first question several of the benefits of technologies in terms of enhancing participation and inclusion have been noted. On the other hand, technology may increase older people's isolation, especially when over reliance on technology leads to loss of human contact (digital banking leading to closing of offices in rural areas, virtual visits replacing face-to-face meetings, etc). As mentioned by an AGE expert consulted for this study:

> *I still prefer human eye contact rather than cold screen, prefer meetings rather than webinars, skypes and other virtual events, which I possibly avoid and which make our relations different. Smart phones, which connect us almost with anything within seconds, are also alienating us by looking at them anywhere and at any time, which I consider as a kind of social bad manner. Yes, by using smart phones I can get a lot of information and any conversation, but I am also aware, that it is possible to see what I am just looking or talking.*

Some assistive technologies aim to create distraction as a form of respite for caregivers[32]. Such interventions are not truly positive for older persons, since they see the individual as passive receiver with the intention of keeping them quiet. So the same technologies that are meant to improve social life, can lead to further isolation.

To mitigate this risk, there is a real need to prioritize human rights over savings. In the case of technologies that are developed to cut down care-related costs, there is a danger that solutions will be limited to providing assistance or alleviating burden without consideration of their quality, efficiency and impact on the rights of individuals. If technologies build on the medical model and fail to recognize older persons as human agents, they sustain their oppression and invalidation. Assistive technologies must not be introduced only as a way to reduce costs, but as a means to provide better and more comprehensive support and to allow older persons to fully participate in society and enjoy their human rights.

Physical and mental health

New and emerging technologies have many benefits on health, for example promoting healthy lifestyles, preventing disease and acute care, improving chances of rehabilitation, etc. Still older persons in our network fear that too much reliance on technology also entails a risk of physical and mental degradation, negative effects on blood circulation, headaches, poor eyesight, depression, addiction and obesity due to lack physical activity, constant sitting, lack of need for

[31] https://ec.europa.eu/digital-single-market/en/blog/robot-companion-elderly-balancing-autonomy-and-ethics

[32] Astell, A. (2006). Technology and personhood in dementia care. *Quality in Ageing and Older Adults, 7*(1), 15-25.

judgement and decision-making and loss of social contacts. Also there is some evidence that for people living with mental illness or experiencing some form of cognitive disability, including dementia, certain technologies could increase symptoms, such as paranoia, delusions, etc

Evidence suggests a relationship between digital technology over-use and mental illness. Overuse of digital technology can increase symptoms of depression and anxiety (Seabrook, 2016) and may negatively affect cognition[33]

Privacy

The use of new and emerging technologies will certainly involve implications for users' privacy, both in the sense of personal data and space. In the case of assistive technologies and telecare, attention must be paid so that the improvement of safety, independence or health protection does not overshadow concerns about privacy. Although users may be willing to 'waive' their right to privacy to some extent as a part of a trade-off for other rights[34], close consideration is needed because information gathered will be particularly sensitive "*as they pertain to the health of individuals, their life choices, political, philosophical and religious beliefs, sexual habits, etc*"[35]. Surveillance technologies may increase unwanted supervision, which is particularly problematic in case it takes place without the conscious knowledge of the individual. The more invisible the technology the more unobtrusive it is but also the less likely for users to be able to fully comprehend its privacy implications (i.e. surveillance technologies). Moreover, *"once robots have the skills to communicate and interact, not only will they exchange data (among themselves; between themselves and an entity), but this communication may be imperceptible to humans*"[36]. The privacy implications of such an exchange must be better understood and addressed.

Safety

Several technologies aim to increase safety among older persons living at home. There are however also some risks. What happens if a user uses automated technology to take a risk or harm himself? How can the system recognise if a hazardous decision is deliberate, conscious and made by a person in a competent state of mind? And should the system follow the will of the user even if will lead to harm? Additionally, malfunctioning technologies may also constitute a

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[33] Seabrook EM, Kern ML, Rickard NS. Social Networking Sites, Depression, and Anxiety: A Systematic Review. JMIR Ment Health. 2016 Nov 23;3(4):e50. doi: 10.2196/mental.5842. PMID: 27881357; PMCID: PMC5143470.; Loh, K. K., & Kanai, R. (2016). How has the Internet reshaped human cognition?. *The Neuroscientist*, *22*(5), 506-520; Munno, D., Cappellin, F., Saroldi, M., Bechon, E., Guglielmucci, F., Passera, R., & Zullo, G. (2017). Internet Addiction Disorder: Personality characteristics and risk of pathological overuse in adolescents. *Psychiatry research*, *248*, 1-5.

[34] Peek, S. T. M., Wouters, E. J. M., van Hoof, J., Luijkx, K. G., Boeije, H. R., & Vrijhoef, H. J. M. (2014). Factors influencing acceptance of technology for aging in place: A systematic review *international Journal of Medical Informatics, 83*, 235-248.

[35] Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195.

[36] Nevejans, N. (2016). *European Civil Law Rules on Robotics - Study for the JURI Committee*: European Parliament, DIRECTORATE-GENERAL FOR INTERNAL POLICIES POLICY DEPARTMENT C: CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS - LEGAL AFFAIRS p.22

hazard. AI entails risks which are hard to predict insofar as machines are able to learn by themselves[37]. Another potential source of harm are cyber-attacks which will impact the system and indirectly cause harm. Regulatory frameworks need to be updated to deal with these risks and the issue of liability in case of failure.

3. *Is the existing international human rights framework adequate to safeguard human rights in an era of rapid technological innovation? Why or why not? If not, what types of reforms are needed?*

Access to new and emerging technologies is at the crossroads of different rights, notably dignity, equality and non-discrimination, autonomy, participation, adequate standard of living, highest attainable standard of health, social protection, education and independent living. However, general human rights norms are not fully adapted to respond to the challenges of rapid digitalization. Interpretation of human rights standards needs to take due account of the implication of new technologies. For example, human rights standards have not yet defined whether state obligations to provide social protection, such as long-term care, could be achieved through new technologies and to which extent technologies can substitute human support. Neither are human rights standards sharply aware of the additional risk of inequalities through the introduction of new technologies or threats for individual autonomy, safety and independence among others.

Additionally, new and emerging technologies may make existing protection gaps even more pronounced. For example, international human rights law does not provide older people with an automatic right to support neither with the right to choice and control over the type of service they receive[38][39]. The notion of support reflected in General Comment No. 6 on the economic, social and cultural rights of older persons is relatively narrower than the obligation included in the UNCRPD, as it is limited to home adaptations. Moreover, the General Comment puts emphasis on community support and self-help as opposed to a State obligation to assist older persons. The UN principle of independence also has a limited scope as it does not explicitly cover all activities of daily living of older persons but is restricted on aspects of food, water, shelter, clothing and health care. Additionally, both the UN principles for older persons

[37] Nevejans, N. (2016). *European Civil Law Rules on Robotics - Study for the JURI Committee*: European Parliament, DIRECTORATE-GENERAL FOR INTERNAL POLICIES POLICY DEPARTMENT C: CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS - LEGAL AFFAIRS

[38] European Network of National Human Rights Institutions. (2015). *Human Rights of Older Persons and Long-Term Care Project: The Application of International Human Rights Standards to Older Persons in Long-Term Care*. The OHCHR also notes that there has been limited attention by human rights bodies to the right of older people to receive support and confirms that there is no explicit provision in international human rights law on the right to be assisted. See: Office of the High Commissioner for Human Rights. (2012). *Normative standards in international human rights law in relation to older persons - Analytical Outcome Paper*. Retrieved from UN Open-Ended Working Group on Ageing: http://social.un.org/ageing-working-group/documents/ohchr-outcome-paper-olderpersons12.pdf

[39] See in particular Madrid International Plan of Action on Ageing (MIPAA), UN Principles for Older Persons and the General Comment no 6 on the Economic Social and Cultural Rights of older persons

and the general comment state that *'older persons should be able to reside at home for as long as possible'*, which leaves a wide margin of appreciation as to when support at home could no longer be available and whether older people could be forced into institutionalized settings or technological forms of support. Furthermore, unlike for persons with disabilities, States do not have an obligation to ensure access to assistive technologies for older persons to carry out daily activities and participate in society. The use of assistive technologies in residential settings is not mentioned at all. The few references focus on medical technologies, failing to encompass the full range of devices that can help older people fully participate in society on an equal basis with others.

Another key protection gap in human rights law is the absence of explicit prohibition of age discrimination[40]. The UN Committee on economic, social and cultural rights accepted that some types of discrimination may be legitimate[41], and further clarified that that age is a prohibited ground of discrimination, only *'in several contexts'* [42]. It is worth noting that the Committee prohibited discrimination based on disability in 1994 in General Comment 5, without setting out any limits to the prohibition. So in the eyes of the Committee, age is a less suspect or less serious ground of discrimination compared to other forms of inequality. Due to this normative gap it could prove difficult to challenge inequalities to access new technologies or challenge discriminatory treatment by automated algorithms.

Without a clear prohibition of age discrimination and lacking a State obligation to ensure access to support in old age the universality of human rights is at stake. Older people are even more vulnerable than other groups - such as persons with disabilities whose right to support is guaranteed under human rights law - to ill-health, exclusion, marginalisation, abuse and neglect. They are more likely to be excluded from the benefits of technology or to suffer their negative implications because human rights norms have treated older people's rights as less serious than the rights of other groups. Against this lack of legal clarity and the increasing use of technologies in the care of older persons it is crucial to discuss their human rights implications and to set standards in order to ensure the equal enjoyment of all human rights by older persons.

4. *In your opinion, are there any gaps or overlaps in existing efforts to respond to the issue of new and emerging digital technologies? Are some human rights or technologies being overlooked?*

To our knowledge discussions on the human rights implications of new technologies overly focus on aspects of privacy and safety. Lately, the debate has also been extended to aspects of

[40] With the exception of the UNCRPD and the International convention on migrant workers none of the other human rights treaties refers to age as a suspect ground of discrimination

[41] UN Committee on Economic, Social and Cultural Rights (CESCR), *General comment No.6: Economic, Social and Cultural Rights of older persons*

[42] UN Committee on Economic, Social and Cultural Rights (CESCR), *General comment No. 20: Non-discrimination in economic, social and cultural rights (art. 2, para. 2, of the International Covenant on Economic, Social and Cultural Rights)*, 2 July 2009, E/C.12/GC/2

discrimination.[43] However, in our view the debate has not adequately addressed issues of autonomy, participation and the impact on people in vulnerable situations, such as older persons who need support. Efforts to respond to these challenges should also become acutely conscious of the impact of ageism in the design and implementation of new technologies.

In terms of technologies that aim to provide support for independent living, available solutions overly focus on how to maintain older persons safe in their own homes. Technologies that can help older persons fully participate in society on an equal basis with others, including by allowing them to leave their home (for example to allow older people join in community and public life and to engage in sports, volunteering, creativity and leisure), with the exception of automated cars, have not yet been adequately developed.

5. *As opposed to focusing on a selected few technologies, do you think a holistic and inclusive approach will help reduce any gaps in the existing system for addressing human rights challenges from new and emerging digital technology?*

A holistic approach is more likely to be able to capture the wide variety of challenges associated with the use of new and emerging technologies.

6. *What should be the role of the private sector in mitigating the risks of new and emerging digital technologies to human rights? What about the roles of other key stakeholders?*

As discussed in previous questions, the private sector plays a key role as developer and also provider of new technologies and should be subject to human rights impact assessments, regulation and supervision. It should have an obligation to involve users in the design and implementation and to adhere to ethical principles. To the extent that technologies are used to provide care and support, private actors also substitute State in the provision of services and should be liable in case of human rights breaches.

Specific questions for civil society organizations

1. *Please describe the relevant work that your organization has done on the issue of new and emerging digital technologies and human rights. What are the key accomplishments? What challenges have your organization faced?*
2. *How does your organization use new and emerging digital technologies to protect and promote human rights?*
3. *What have been the greatest challenges when using new and emerging technologies? Have these technologies been effective?*
4. *Is the current international human rights system or are the government policies effective in addressing human rights challenges from new and emerging digital technologies? If not, how can they be improved?*
5. *How do you evaluate citizens' awareness of the potential conflict between new and emerging digital technologies and human rights? Does your organization have a roadmap to enhance public awareness of the issue?*

[43] Add articles

AGE and our member organisations have been paying attention and raising awareness of the human rights implications of new technologies in events, trainings as well as within EU-funded projects. We have also used our website and other dissemination channels, including our AgeingEqual campaign to discuss some of the human rights challenges that are linked with digitalization. Some of AGE members have also organized and provided digital literacy trainings for older persons. Additionally, AGE has provided input for the report of the UN Independent Expert on the impact of new technologies to the rights of older persons.

AGE is also joining forces with other NGOs at EU level to share experience and expertise on this issue, for instance it supported the development of a Human-Centered Digital Manifesto for Europe which covers a number of issues linked to human rights and new technologies and provides recommendations to the European Union on how to move forward.

Older persons are becoming aware of some of the challenges of new technologies for their human rights but further awareness is necessary. AGE intends to share knowledge about potential human risks and also participate in relevant consultations and processes in order to bring forward the perspective of older persons.

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[i] *The term *new and emerging technologies* broadly refers to innovations that are transforming the boundaries between virtual, physical and biological spaces. They include new technologies and techniques of datafication, data distribution, and automated decision-making, such as artificial intelligence, the Internet of Things, block chain, cloud computing, and personalized medicine, among others.