Internet of Things

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The European Parliament adopted by 606 votes to 18, with 17 against, a resolution on the Internet of Things (IoT).

Overall, Parliament welcomes the communication from the Commission and endorses in principle the broad outlines of the action plan to promote the Internet of Things. It takes the view that the expansion of the IoT may bring tremendous benefits for EU citizens if it respects security, data protection and privacy.

Protection of privacy and personal data: Parliament endorses the Commission's focus on safety, security, the protection of personal data and privacy and governance of the Internet of Things, because respect for privacy and the protection of personal data, together with openness and interoperability, is the only way IoT will gain **wider social acceptance**. It calls on the Commission to encourage all European and international stakeholders to tackle cyber security-related threats. Members firmly believe that protection of privacy constitutes a core value and that all users should have control over their personal data. It calls therefore for the adaptation of the Data Protection Directive to the current digital environment.

Infrastructure issues: Parliament calls on the Commission to conduct an assessment of the impact of using the current 'internet' network infrastructure for IoT applications and hardware, in terms of network congestion and data security. It takes the view that the development of the IoT and related applications will have a major impact on the daily lives of Europeans and their habits in the years ahead, leading to a broad range of economic and social changes. The Commission's communication does not give enough consideration to these issues, which should ideally be dealt with before the Internet of Things is further developed. Parliament calls on the Commission to coordinate its work on the Internet of Things with its overall work on the digital agenda.

Ethical and cultural aspects of the IoT: Parliament stresses the importance of studying the social, ethical and cultural implications of the Internet of Things, in the light of the potentially far-reaching transformation of civilisation that will be brought about by these technologies. It calls on the Commission to set up a panel of experts to carry out an in-depth assessment of these aspects and propose an ethical framework for the development of related technologies and applications.

Quiet and unobtrusive technologies: pointing out that RFID (radio frequency identification) technology and other IoT-related technologies for the intelligent labelling of products and consumer goods can be used anywhere and in practice are quiet and unobtrusive, Parliament calls for such technology to be the subject of further, more detailed, assessments by the Commission, covering in particular:

- the impact on health of radio waves and other means of enabling identification technologies;
- the environmental impact of the chips and of their recycling;
- user privacy and trust;
- the increased cyber security risks;
- the use of smart chips in specific products;
- the right to **'chip silence'**, which provides empowerment and user control;
- guarantees for the public as regards protection during the collection and processing of personal data;
- developing an additional network structure and infrastructure for IoT applications and hardware;
- ensuring the best possible protection for EU citizens and businesses from all kinds of online cyber attacks;
- the development of open technological standards and interoperability between different systems.

According to Members, the consumer has the right to privacy by opt-in and/or privacy by design, notably through the use of **automatic tag disablement** at the point of sale. They call on manufacturers to secure the right to **'chip silence'** by making RFID tags removable or otherwise easily disabled by the consumer after purchase. They stress that the consumers must be informed about the presence of either passive or active RFID tags. RFID application operators are called upon to take all reasonable steps to ensure that data does not relate to an identified or identifiable natural person.

Strengthen security: Parliament stresses the need to prevent fraud. Particular attention should be paid to security measures ensuring that **only authorised users can access data**. The resolution states that consumers and the assigning authorities should be able to check the readability of data and the functioning of the system. It considers it a priority to ensure a global regulatory framework. The Commission is called upon to monitor possible new threats presented by the vulnerability of highly interlinked systems. In addition, Parliament calls on the Commission to make further efforts to ensure that IoT-related technologies include user requirements (e.g. a traceability de-activation option). It calls on the Commission to monitor closely the implementation of the European regulations already adopted in this area and to present, by the end of the year, a timetable for the guidelines it intends to propose at EU level for improving the safety of the Internet of Things and of RFID applications. It also considers it vital to analyse aspects relating to Wi-Fi security systems.

Considerable volume of data: noting that the Internet of Things will lead to the collection of truly massive amounts of data, Parliament calls on the Commission to submit a proposal for the adaptation of the European Data Protection Directive with a view to addressing the data collected and transmitted by the IoT. A general principle should be adopted whereby IoT technologies should be designed to collect and use only the absolute minimum amount of data needed to perform their function.

Building consumer trust: Members consider that the development of new applications and the actual functioning and business potential of the IoT will be intrinsically linked to the trust European consumers have in the system, and point out that trust exists when doubts about potential threats to privacy and health are clarified. They stress that this trust must be based on a clear legal framework, including rules governing the control, collection, processing and use of the data collected and transmitted by the Internet of Things and the types of consent needed from consumers.

Cost reduction: Parliament stresses that transparency of follow-up costs is needed for the consumer, for example in relation to the electricity consumption of the application and deployment of things. It is also necessary for the Commission to explore the possibility of further **reducing data roaming costs**. Members believe that the IoT requires broad information campaigns to explain to citizens the purpose of their implementation.

Cutting edge development of internet technologies: pointing out that other parts of the world, in particular Asia, are developing faster in this sector, Members stress that, in order to revive the European economy, investment must be made in this area in order to facilitate economic growth. They emphasise that Europe should be at the cutting edge of the development of internet technologies and propose that the EU's ICT research budget be doubled and that the budget for ICT take-up be multiplied by four in the next Financial Perspective.

The resolution endorses the use of the Competitiveness and Innovation Framework Programme (CIP) to promote its expansion. It calls, especially, for the development of pilot projects that may have an immediate positive effect on the everyday lives of European citizens in the areas of e-Health, e-Learning, etc).

A potential for economic development: Parliament believes that the IoT has significant potential in terms of economic and productive development, better-quality services, the optimisation of corporate logistics and distribution chains, inventory management and the creation of new employment and business

opportunities. It calls on the Commission to make an assessment of any impact that its proposed strategy might have on the productivity and competitiveness of European enterprises in the international market. It also believes that the IoT can contribute to the facilitation of trade flows between the EU and third countries through the expansion of markets and the securing of quality guarantees for the products traded. Furthermore, it stresses that RFID technologies will, on the one hand, enable European industries to control the volume of goods in circulation (i.e. by producing only when necessary, thereby protecting the environment) and, on the other hand, offer an effective means of combating piracy and counterfeiting, as it will be possible to trace the goods concerned. Applying new technologies to production processes will increase the resource efficiency and market competitiveness of consumer goods.

Review the harmonisation of spectrums: Members endorse the Commission's intention to continue to monitor and assess the need for additional harmonised spectrums for specific IoT purposes, taking into consideration the different characteristics and capabilities of various electromagnetic frequency bands. They call on the Commission, when setting the Union's coordination and harmonisation objectives through the Multiannual Radio Spectrum Policy Programmes, to take into account the needs of the Internet of Things. They stress that such spectrums should remain **publicly owned**, and that their use should be regulated in such a way as to encourage and help fund more technological research and development in this field. They believe that unlicensed spectrum should allow the use of new technologies and services (wireless networking) to emerge so as to foster innovation. In parallel, Members call for the establishment of common international norms for the standardisation of RFID and other IoT technologies and their applications, with a view to facilitating interoperability and an open, transparent and technologically neutral infrastructure.

Strengthen social dialogue: Parliament asks the Commission to initiate a social dialogue regarding the Internet of Things, and to provide information on the positive and negative effects of the new technologies on everyday life. A proactive consultation with the European industry sector should be engaged. SMEs should be involved in this dialogue. Lastly, the governance of the IoT must keep 'red tape' to a minimum and involve all relevant stakeholders in the decision-making process.