



WORK IN PROGRESS - v1.0

## Smart Society Charter

### IoT Architecture principles & guidelines

*City of Eindhoven*

In a Smart Society, digital online technologies become seamlessly integrated in the physical offline world, to improve people's lives and contribute to the development of the society. The most important thing in a Smart Society is that people experience the benefits of what the intensive co-evolution of digital and analogue, virtual and physical, online and offline will bring them.

With more and more technologies on the Internet of Things, and increasing volumes of data being collected, it is inevitable that IoT and data-driven services will have a serious impact on our lives. As a pioneer of the Smart Society, the City of Eindhoven is already facing up to imminent changes, and confronting the dilemmas that the new technologies bring with them. In order to safeguard public interest, stimulate innovation, foster a sustainable ecosystem of partners and encourage socially responsible business models, we have put together a few simple common principles to apply to an architecture of all current and emerging IoT initiatives across the city.

These principles are being developed in cooperation with commercial partners, start-ups and small enterprises, independent IoT developers, academic and research institutes, citizen-driven initiatives and other public organizations. We believe that these principles reflect our common values, contribute to the development of the city and improve the quality of life of its residents. We call on all IoT parties in Eindhoven, as well as our Dutch and international partners, to adopt, extend and reflect on these principles when building new or improving existing IoT and data infrastructures, platforms, services and applications. In a Smart Society, all participants should benefit from technology's achievements.

### 1 Privacy first



**First and foremost, the privacy of the users and citizens should be guaranteed.**

People should be given insight into the data that is collected and control over the way it is and will be used. Ethical aspects should be taken into account when extending practices into areas not addressed by current legislation.



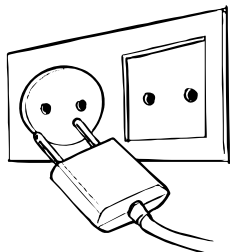
## 2 Open data and interfaces



**We facilitate innovation by making data publicly available and enabling access to IoT & data systems through open interfaces.**

We stimulate new business models and emerging services that rely on generating added value, rather than exploiting licenses on data or exclusive rights on the infrastructure. We recommend making the infrastructure open on the lowest level and making raw data publicly available whenever this can be done without compromising the privacy and security of the citizens.

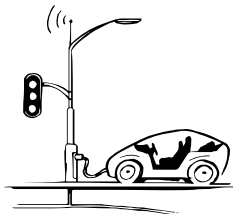
## 3 Embrace open standards



**Wherever available, the IoT infrastructure, connectivity, platforms, devices and services should be built on open or broadly agreed de-facto standards.**

Using established standards will facilitate evolution of infrastructure and services, sustain a competitive market and prevent vendor lock-in. Where standards are not yet available, maintaining openness and sharing best practices will help to lay a foundation for the future.

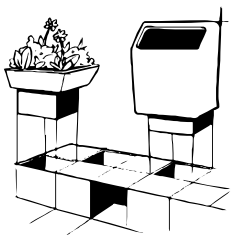
## 4 Share where possible



**We expect all IoT and Data developments to provide well-defined, easily accessible stable interfaces for sharing and reusing existing assets.**

Shared use of grids, sensor networks, connectivity and software components will lower the barriers for their adoption, increase connectivity and stimulate interoperability. The IoT & Data infrastructure should be available for re-use, as well as open to innovation and expansion.

## 5 Support modularity

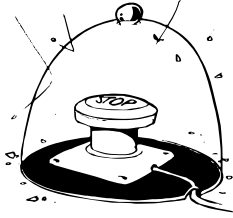


**We recommend adopting a modular architecture with well-defined open interfaces as the core of any IoT or data-driven development.**

Modularity helps to ensure interoperability between platforms, services and applications and facilitates re-use and cooperation between partners.



## 6 Maintain security



**The reliability of components, platforms, solutions and services must be constantly safeguarded.**

Ensuring confidentiality, integrity and availability is vital to essential services and core parts of the infrastructure, which need to be safeguarded to the highest possible degree. In addition, all digital assets must be well-protected from attack, damage or unauthorized access.

## 7 Accept social responsibility



**Providing new technologies and services, and collecting and combining data may result in unforeseen effects on society or individuals.**

We cannot predict the future. We encourage experimentation, provided responsibility is taken for the consequences.