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ROADMAP ON THE ENVIRONMENT AND DIGITAL TECHNOLOGY

50 measures for a French and European agenda on responsible digital technologies: sustainable and at the service of the ecological transition and of the sustainable development goals

PRESS KIT
Report of the French Digital Council

Roadmap on the environment and digital technologies

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Authors' editorial

The many scientists mobilized on the front lines of the climate and environmental crises agree: human activities put the environment under serious threat. The environmental emergency calls for immediate and ambitious actions by public authorities, civil society and businesses. However, while digitization has radically changed our society, economy and democracy, it has not yet proved to be a positive contribution to the ecological transition. On the contrary, digital technologies adversely affect the environment. They must be put at the service of humanity and the environment by making them carbon neutral and more resource efficient. For this goal to be achieved, digital technologies must be sustainable and made part of a circular economy. The necessary changes towards sustainability, ecologically responsible and inclusive digital technologies must start as soon as possible. They must be based, on the one hand, on research, which must be vigorously supported in order to expand knowledge of the interactions between digital technologies and the environment and, on the other hand, on the commitment of all stakeholders. This is the spirit in which this roadmap on the environment and digital technologies has been written.

This roadmap is the result of an unprecedented collaboration between two independent public bodies: the High Council on Climate and the French Digital Council. It is also the outcome of several months of work, during which we have observed a widespread awareness of the links between ecology and digital technologies. But this roadmap is above all the fruit of collective intelligence and of the richness of the meetings between digital and ecological players. The roadmap has indeed mobilized actors from different horizons: public authorities, researchers, experts, associations, think tanks, companies and professional associations. We would like to express our deep and respectful gratitude to all the contributors and to all the people interviewed.

The roadmap proposes to the French Government a pragmatic and actionable instruction manual, in order to create a responsible digital environment, which would be sober and would support an ambitious environmental policy. Responsible digital technologies are based on two main pillars. Sober technologies, the first pillar of the roadmap, aim to reduce their own environmental footprint by design - from infrastructures, products and services - till their end of life. Digitization at the service of the ecological transition, the second pillar of the roadmap, gathers technologies serving environmental goals, where relevant and demonstrated. Potential exists, for example, in the fields of biodiversity, connected agriculture, energy optimisation or sustainable and smart territories. The potential for innovation is very significant and represents an opportunity for France and the European Union to seize. It may seem paradoxical to note that digital technologies has a harmful ecological footprint while at the same time advocating that all its potential should be put to the service of the environment. However, this paradox mainly stems from the different temporalities of the levers of action. While

the environmental impacts of digital technologies are already measurable, the opportunities are more difficult to quantify. Reconciling both transitions can only be achieved through profound socio-economic changes, which include making digital actors responsible and encouraging them to react and commit to a responsible digital environment. This responsibility undeniably implies the education and acculturation of as many people as possible to the responsible use of digital technologies. It brings us resolutely back towards local and regional actions, because it is at the level of local authorities that the ecological transition is largely played out. It is also a question of sovereignty, as reconciling the ecological and digital transitions can enable France and Europe to keep a handle on their future. Finally, the pandemic and the systemic health, economic and social crisis generated by the COVID-19 spread require far-reaching reforms.

We are therefore all hoping for a green economic recovery in which the ecological transition and a more sober and responsible digital transformation have their place. We are pleased to see that several of our proposals are aligned with those of the Citizens' Climate Convention and the Senate's information mission on the environmental footprint of digital technologies. We therefore hope that many public and private players will take up this roadmap and implement the principles it recommends so that 2020 will be a founding and salutary turning point for responsible digital technologies.

The pilot members of the French Digital Council

Annie Blandin, Sophie Flak, Thomas Landrain and Hervé Pillaud

Background

On February 2020 11th, Élisabeth Borne, Minister for Ecological and Inclusive Transition and Cédric O, Secretary of State for Digital Affairs, asked the French Digital Council (CNNum), in partnership with the High Council for the Climate (HCC), to draw up a roadmap on digital technologies and the environment designed with a European and international scope, to feed into the proposals for the European Commission's Green Deal for Europe and to meet the sustainable development objectives (SDOs) of the Agenda 2030 set by the United Nations. The Government's referral was structured around two axes:

- **a more sober digital world, mindful of its environmental impact,**
- **digital technologies as an instrument for the ecological transition.**

The present roadmap is based on a close collaboration with the main administrations concerned and some 40 contributors including environmental and consumer protection associations, researchers, experts and think tanks, businesses and business federations. This work is therefore the fruit of a collective effort at french level.

Reflections on responsible digital technologies were already at the heart of the March 2018 white paper "Digital Technologies and the Environment - Accelerating the Green Transition"[1], to which CNNum contributed. The reflections of this white paper were structured around four main themes:

- put in place the necessary incentives and channels to reduce the direct impacts of digital technologies, so as to be exemplary in this respect,
- use digital tools to better design their environmental policies,
- change their innovation support systems to steer the digital revolution towards solving environmental problems,
- mobilize the potential of data as an instrument for the ecological transition.

Following on from this white paper and the French proposals on digital technologies and the environment, including the law on the fight against waste and the circular economy, adopted in February 2020[2], **the French Digital Council has proposed a roadmap that outlines a path that will enable progress towards a responsible digital environment, i.e. one that is low in energy and resources consumption, supporting the ecological transition and the SDGs.** This implies making strong political commitments so that the digital actors can take responsibility and citizens can be made actors of responsible digital technologies.

[1] CNNUM, FING, GREENIT.FR, IDDRI and WWF FRANCE, *Digital Technologies and Environment White Paper - Making the Digital Transition an Accelerator of Ecological Transition,* March 2018, Available online here.
[2] Law n°2020-105 of February 10, 2020 on the fight against waste and circular economy. Available online here.

Summary of the roadmap

While the preservation of our environment is one of the major challenges facing humanity, digital technologies have so far not positively contributed to the ecological transition. Far from the immateriality and cleanliness wrongly attributed to it[3], digital technologies cause environmental harm: in the exploitation of non-renewable natural resources, pollution due to metal extraction and waste, and energy consumption. In fact, in addition to user equipment and terminals, it also includes servers, graphics cards, cables, power supplies, routers, screens, etc. Digital technologies have an environmental footprint[4]: upstream when equipment is manufactured, downstream in terms of electricity production and consumption, and at the end of its life. This footprint must be characterized according to several criteria, including water and soil pollution, climate change, depletion of abiotic resources[5] and energy consumption[6].

A growing body of research in recent decades have been devoted to the direct and indirect negative impacts of digital technologies on the environment, the so-called "dark side" of digital technologies[7]. All agree that the ecological footprint of digital technologies has long been unsustainable and is growing every day. This scientific observation has led to the emergence of a growing public awareness. In this respect, the roadmap is in line with several proposals put forward by the Citizen's Climate Convention, in particular the one that proposes to support the evolution of digital technologies in order to reduce its environmental impact[8]. It also meets almost all of the 25 recommendations made by the Senate's information mission on the environmental footprint of digital technologies for an ecological digital transition[9].

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[3] On the preconceived ideas regarding digital technologies, see in particular: RODHAIN Florence, *La nouvelle religion du numérique - Le numérique est-il écologique?* EMS Publishing, 2019. *Adde* : FLIPO Fabrice, DOBRÉ Michelle, MICHOT Marion, *La face cachée du numérique* L'*impact environnemental des nouvelles technologies*, L'Échappée, 2013.

[4] The environmental footprint is the assessment of the potential environmental impacts of a defined product, organisation or territory, within a given spatial and temporal perimeter. The environmental footprint is a methodology based on a life cycle approach, i.e. it takes into account the life cycle of the system under study. Environmental footprints are multi-criteria methodologies, i.e. it does not take into account a single environmental impact criterion such as climate change or energy consumption, but covers several environmental impacts such as: depletion of fossil/mineral resources, water consumption, depletion of the ozone layer, eutrophication, acidification, etc.

[5] *Abiotic* factors are represented by physico-chemical phenomena (light, temperature, air humidity, chemical composition of water, atmospheric and hydrostatic pressure, physical and chemical structure of the substrate). Abiotic resources are those created by the earth on a geological time scale: oil, ore, and other resources essential to modern civilization.

[6] See in particular: MTES, *Digital and energy consumption*, Thematic sheet - The environment in France. Available online here.

[7] On the environmental footprint of digital *technologies*: ECOINFO GROUP, *Impacts écologiques des Technologies de l'Information et de la Communication - Les faces cachées de l'immatérialité*, EDP Sciences, 2012. *Adde* : ADEME, *Potentiel de contribution du numérique à la réduction des impacts environnementaux : état des lieux et enjeux pour la prospective,* rapport 2016, Available online here and BORDAGE Frédéric, *Sobriété numérique : les clés pour agir,* Buchet Chastel, 2019.

[8] Proposal n° 150 in: CITIZENS' CONVENTION FOR CLIMATE, The proposals of the Citizens' Convention for Climate, June 2020. Available online here.

[9] MAUREY Hervé (Chairman of the committee), CHAIZE Patrick (Chairman of the fact-finding mission), CHEVROLLIER Guillaume and HOULLEGATTE Jean-Michel (rapporteurs), *Information report made on behalf of the Committee on Regional Planning and Sustainable Development by the fact-finding mission on the environmental footprint of digital technologies for an ecological digital transition,* June 2020. Available online here.

The environmental footprint of digital technologies in a few figures:

- The European Commission estimates that the energy and environmental footprint of digital technologies is "*in the range of 5% to 9% of global electricity consumption, and more than 2% of all emissions*"[10].
- Of course, digital is not a sector in its own right: because of its cross-cutting nature, it has an impact on all sectors. However, it could emit the equivalent, or even double, the greenhouse gas emissions of the civil aviation sector (which accounts for around 2% of global CO2 emissions)[11].
- Indeed, other estimates are even higher, going so far as to evaluate that the share of digital technologies in greenhouse gas emissions represents between 3.7%[12] and 4.3%[13] of total global emissions. On a global scale, digital technologies would thus represent "*a seventh continent 2 to 3 times the size of France (depending on the environmental indicator observed) and up to more than 5 times the size of France if we consider other indicators (mass, etc.)*"[14].

At the French level, according to a study on the carbon footprint of digital technologies in France[15], its particularities in relation to global trends and its development up to 2040 (commissioned by the Senate's information mission on the environmental footprint of digital technologies), digital technologies are a major source of greenhouse gas emissions. It represents 15 million tons of CO2 equivalent, or 2% of total emissions in 2019, which could increase considerably in the coming years if nothing is done to reduce its impact (+60% by 2040, to reach 24 MtCO2eq). *"In 2040, if all the other sectors achieve carbon savings in accordance with the commitments of the Paris Agreement and if no public policy of digital sobriety is deployed, digital technologies could reach nearly 7% (6.7%) of France's greenhouse gas emissions, a level much higher than that currently emitted by air transport (4.7%). This growth would be driven in particular by the growth of the Internet of Things (IoT) and data centre emissions. The collective cost of these emissions could rise from 1 to 12 billion euros between 2019 and 2040. The results of the study also show that terminals are responsible for a very large share of the environmental impacts of digital technologies (81%), even more than on a global scale (according to GreenIT.fr, terminals account for 63% of the greenhouse gases emitted by the sector). The manufacture and distribution (the "upstream phase") of these terminals used in France generate 86% of their total emissions and are*

[10] EUROPEAN COMMISSION, *Shaping Europe's Digital Future,* Communication from the European Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions, COM(2020) 67 final, February 2020, Available online here.

[11] MINISTRY OF ECOLOGICAL AND INCLUSIVE TRANSITION, *Aircraft and Climate Change,* February 2020. Available online here.

[12] According to The Shift Project: "*The share of digital technologies in greenhouse gas emissions has halved since 2013, from 2.5% to 3.7% of total global emissions,*" more than civil aviation. See: THE SHIFT PROJECT, *Lean ICT. Pour une sobriété numérique,* report of the working group led by Hugues Ferreboeuf for the think tank The Shift Project, 2018. Available online here.

[13] GREENIT.FR, *Global Digital Environmental Footprint,* October 2019. Available online here.

[14] GREENIT.FR, *Global Digital Environmental Footprint,* April 2020. Available online here.

[15] *The figures presented here for France come from the study on the evaluation of public policies to reduce the digital carbon footprint (June 2020), carried out by the Citizing firm, supported by Hugues Ferreboeuf and the KPMG firm, at the request of the Senate's Committee on Spatial Planning and Sustainable Development.*

therefore responsible for 70% of the total carbon footprint of digital technologies in France. This proportion - much higher than the 40% observed worldwide - is mainly due to operations that consume fossil energy, such as the extraction of materials required for their manufacture, and to the fact that these terminals are largely imported from South-East Asian countries, where the carbon intensity of electricity is much higher than in France".[16]

Conversely, beyond the environmental footprint of digital technologies, the ability of digital technologies to transform our consumption and production patterns **could be a real opportunity to facilitate the ecological transition, provided that all production and consumption systems change. We therefore need, first of all, for production and consumption systems to evolve, and secondly, for "*a controlled, intelligent digital environment to facilitate or even accelerate the ecological transition. The convergence between ecological transition and digital transformation therefore represents a major challenge*"[17].**

At a time when the European Commission is making the challenges of the ecological and digital transitions one of its priorities, it is crucial for France to seize the **opportunity to position itself as an international figure of responsible digital, i.e. sober, sustainable and an instrument for the ecological transition. Activating digital technologies to serve the environment is a challenge at the European, national and local levels. *"The roadmap is part of these three contexts. Its objective is to provide food for thought at the European level, as this subject is one of the priorities announced by the European Commission within the framework of the Green Climate Pact and by Germany in the context of the future presidency of the European Union"*[18].** More broadly, it provides a response to the *Agenda 2030 on the 17 sustainable development objectives* (SDOs) set by the United Nations. The roadmap for a responsible digital economy could be included in the economic recovery plan following the COVID-19 crisis, specifying that it must be green, i.e. sustainable. It could also be financed by european fundings programmes.

The deployment of the roadmap in the coming months will require a strong mobilisation of everyone – citizens, local authorities, businesses, associations, administrations, research and development players in all territories – to take action and scale up towards a responsible digital environment. But the members of the Council are confident, as they have seen that many players are committed to responsible digital technologies in France.

This roadmap is based on three pillars: the first calls for reducing the environmental footprint of digital technologies, the second intends to harness the potential of digital technologies as an instrument for the ecological transition, and the last aims to support the whole of society towards a responsible digital society. These three areas of work should make it possible to achieve three ambitious priority objectives:

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[16] MAUREY Hervé (Chairman of the commission), CHAIZE Patrick (Chairman of the fact-finding mission), CHEVROLLIER Guillaume and HOULLEGATTE Jean-Michel (policy officers), *op. cit.*

[17] BLANDIN Annie, "We need a controlled, intelligent digital system that will facilitate or even accelerate the ecological transition", Dossier: What digital sobriety in the territories? in: *Horizons publics* n°14, March/April 2020.

[18] BLANDIN Annie, *op. cit.*

- To reduce the environmental footprint of digital technologies, the aim will be to achieve zero net emissions without compensation by 2030 and 100% eco-designed digital goods and services in order to significantly reduce the environmental footprint of digital technologies.
- In order to put digital technologies at the service of the ecological and solidarity transition, the aim will be to identify the digital levers that will make it possible to substantially reduce greenhouse gas emissions thanks to digital technologies by 2040 and to reconcile *high-tech and low-tech*[19] around the major objectives of the ecological and solidarity transition.
- In order to make a successful transition towards responsible digital technologies, a toolkit for achieving sober digital technologies, supporting the environmental transition will have to be put in place by 2022.

The roadmap is also accompanied by an opinion on environmental data of general interest which are by their nature intended to contribute to the general interest[20].

- **Reducing the environmental footprint of digital and developing digital sobriety**

In the context of the objective set by the Paris Agreement to contain climate change, it is imperative to mobilize and empower producers and consumers of digital goods and services (businesses, administrations, individuals) to adopt digital sobriety as a guide for action, i.e. digital tools and uses that are more environmentally friendly. This dynamic can be broken down into four pillars:

- A better evaluation and quantification of the environmental footprint of digital technologies, in particular to raise awareness about the environmental impacts of digital technologies in order to drastically reduce them;
- To less and better design and manufacture digital goods and services so that, usefulness, sustainability, sobriety and integration into the circular economy become the new principles of how they are designed and manufactured;
- To less and better consume digital goods and services in order to make them last as long as possible and reduce usage;
- To better collect, reuse and repair digital assets and to better collect and recycle waste, especially by creating channels of excellence in repair, reuse and recycling.

[19] There is no precise definition of low-tech. "*Low-tech, as opposed to high-tech, is an approach aimed, from a sustainability perspective, at questioning our real needs and developing solutions that are as low-tech as possible, minimising the energy required for production and use, using as few rare resources/materials as possible and not imposing hidden costs on the community. They are based on the simplest possible techniques, the least possible dependence on non-renewable resources, on products that can be repaired and maintained over time, facilitating circular economy, reuse and recycling, based on knowledge and dignified human work. This approach is not only technological, but also systemic. It aims to challenge economic, organizational, social and cultural models. As such, it is broader than ecodesign.*"

[20] FRENCH DIGITAL COUNCIL, Make environmental data into data of public interest, opinion of july 2020. Available online here.

- **Making digital technologies a lever for ecological transition**

It is necessary to make better use of the potential of digital technologies in France and in Europe as an instrument for the ecological transition and sustainable development goals. To this end, it is suggested to:

- Put data at the service of the ecological transition in order to offer an even greater openness of information related to the environment and thus mobilize their full potential in sustainable development goals;
- Mobilize digital technologies for the ecological transition, around projects on sustainable innovation, low-tech, cooperative economy, agriculture, energy, industry of the future, mobility, and sustainable and intelligent territories;
- Create a responsible European artificial intelligence, i.e. consistent with the ecological transition and SDGs.

- **Using a toolbox of cross-cutting actions for a responsible digital society**

The roadmap advocates convergence between the digital and environmental transitions as a prerequisite for responsible digital. In this sense, it is crucial to **foster the meeting of stakeholders in order to put the digital transition at the service of the ecological transition and to create a coherent and attractive national and European framework for projects of general interest on the convergence of digital and ecological transitions.**

Several conditions are essential to achieve responsible digitalisation:

- Mobilize the actors to put the digital transition at the service of the ecological and solidarity transition and thus create a network of coordinated actors from these worlds;
- Beyond educating and raising the awareness of political and economic decision-makers, raise awareness about responsible digital citizenship in order to transmit knowledge, skills and good reflexes on ecological and digital transformations to current and future generations ;
- Strengthen training and research for a responsible digital society, because the needs in this area are considerable: it is a question of creating and developing French talent for future professions and research;
- Finance the recommendations of the roadmap, because the attractiveness of France and Europe in terms of responsible digital technologies cannot be achieved without massive investment in the implementation of a national and European ecosystem, education and training, research, innovation and the monitoring and coordination of the actions of the roadmap ;
- Implement and monitor the implementation of the roadmap, since compliance with legislation and recommendations and the establishment of a strategy for European and international cooperation are the prerequisites for any success.

This roadmap should be implemented through an inter-ministerial strategy on responsible digital, which could be co-driven by the Commissioner-General for Sustainable Development, the Directorate General for Enterprise (*Direction générale des entreprises*) and the Interdepartmental Directorate for digital affairs (*Direction interministérielle du numérique*).

The 50 measures of the roadmap

***** = priority action**

Project 1: Sober digital

Adopt the concept of digital sobriety as a principle of action to reduce the digital environmental footprint

⇒ By 2030: Achieve zero net greenhouse gas emissions without compensation and 100% eco-designed digital goods and services to significantly reduce the digital environmental footprint

Objective 1: better assessment and quantification of the environmental footprint of digital technologies

1. Agree on methods for quantifying the environmental impacts of digital technologies
2. Systematize the quantification of the environmental impacts of digital technologies
3. *****Anticipate the environmental impacts of digital technologies and achieving carbon neutrality without compensation by 2030 to make the digital transition an exemplary transition**

Objective 2: less and better production and design of digital goods and services

4. *****Manage resources related to the manufacture of digital goods in a more sustainable way**
5. *****Make the production of digital goods more sustainable by setting ambitious European targets**
6. Optimize data centres energy consumption and reducing their environmental impact
7. Limit the environmental footprint of the design and deployment of digital networks and infrastructures
8. *****Fight against programmed obsolescence, including software and indirect obsolescence**
9. Generalise eco-design approaches for online public services and the online services of large companies

Objective 3: less and better consumption of digital goods and services

10. *****Question the relevance of our digital uses in order to limit their growth**
11. Encourage and empower citizens to adopt digital sobriety
12. Act on consumer behaviour by making advertisers, manufacturers and platforms more responsible.

13. Regulate the digital attention economy, partly responsible for the increase in our digital usage
14. Build and displaying a reparability and durability index for digital equipment and services
15. ***Create a digital passport for goods and services**
16. ***Adopt the principle of sobriety as a guide to the digital transformation of the administration and direct public procurement towards eco-responsible digital equipment and services**
17. Include the environmental footprint of digital technologies in carbon regulations
18. Strengthen the legal guarantees of digital equipment

Objective 4: Better collection, reuse and repair of digital assets and better collection and recycling of digital waste

19. Extend and strengthen the Extended Producer Responsibility (EPR), but also the responsibility of manufacturers and distributors
20. ***Support and strengthen the reuse, reconditioning and repair sectors**
21. ***Support and strengthen the recycling industry**
22. Improve the collection of waste electrical and electronic equipment (WEEE)
23. Ensure compliance with existing recycling standards and making the fight against illegal treatment and export of electrical and electronic waste a priority

Project 2: Digital technologies at the service of the ecological transition

Giving meaning to digital technologies to use it as an instrument for sustainable development goals

⇒ By 2040: Substantially reduce greenhouse gas emissions thanks to digital technologies and reconcile high-tech and low-tech around the major objectives of ecological and solidarity transition

Objective 5: Using data as an instrument for the ecological transition

24. Develop a "data culture" supporting ecology
25. ***Put data of general interest at the service of the environment and of the governance of ecological transition**
26. Establish conditions for data sharing between private actors and supporting data co-production projects for ecological transition
27. Foster open science and data-driven research for ecological transition

Objective 6: mobilising digital technologies for the ecological and solidarity transition, without presupposing that digital is the only relevant approach

28. Launch "major sustainable innovation challenges"
29. ***Support low-tech projects**
30. Develop the cooperative economy for ecological transition
31. Use digital innovation in order to preserve the environment and biodiversity
32. Use digital technologies for energy transition
33. Use digital technologies for the development of sustainable and intelligent territories

Objective 7: creating a responsible artificial intelligence

34. Bring the ambition of responsible artificial intelligence (AI) to national, European and international levels
35. ***Implement a strategy for a sober AI at the service of sustainable development goals**

Project 3: Tools and levers for responsible digital technologies

The implementation of responsible digital technologies as an instrument for sustainable development goals

⇒ By 2022: create a toolbox of cross-cutting actions to achieve the convergence of ecological and digital transitions

Objective 8: mobilising stakeholders to make the digital transition environmentally friendly

36. Put the objectives of the digital switchover at the service of those of the ecological transition at local, national and European levels, in particular by centralising information on responsible digital technologies
37. Foster the meeting of actors of the digital and ecological transitions in order to create a convergence of these two worlds around sustainable development goals
38. Create the conditions for the emergence of digital innovations to serve the ecology in the territories
39. Engage the free software ecosystem (open models, free software)
40. ***Create, at the European level, a label or a code of good conduct on Responsible Digital Technologies to promote exemplary companies and initiatives**

Objective 9: educating and raising awareness about responsible digital citizenship

41. ***Educate citizens on the environmental and societal impacts of digital technologies**
42. ***Train students to be digitally responsible by integrating environmental and societal issues into digital training courses**

Objective 10: strengthening research and training for a responsible digital society

43. Support research projects on digital-environment interactions
44. ***Set up a research observatory on the environmental and societal impacts of digital technologies**
45. ***Train students, teachers and civil servants on the direct and indirect impacts of digital technologies in order to encourage vocations at the crossroads between digital technologies and the environment**

Objective 11: financing the recommendations of the roadmap

46. Prioritise funding and orienting public policies in favour of digital projects with a zero footprint or environmental benefits, also known as "Do No Harm" projects
47. ***Implement an ambitious financing plan for this roadmap, in particular through the recovery plan for Europe and European funds dedicated to France**

Objective 12: accompanying, applying and monitoring the implementation of the roadmap

48. Support businesses, especially SMEs, to implement existing regulations and initiatives on responsible digital technologies and strengthening controls on their applications
49. ***Set up a governance body to ensure the follow-up of the Responsible Digital Agenda**
50. Continue France's action in favour of responsible digital technologies at European and international level

About the French Digital Council

The French Digital Council is an independent advisory commission. It is responsible for studying digital issues, in particular the challenges and prospects of the digital transition for society, the economy, organisations, public action and territories. It reports to the Secretary of State for Digital Affairs. Its articles of association were amended by the decree of December, 8 2017. Its members are appointed by order of the Secretary of State for Digital Affairs for a period of two years.

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About the Roadmap

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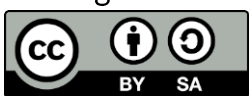

Quote:
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