

## **Data Protection, Privacy and Consenting: A Simple Guide to the ADPC-IoT Mobile App**

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# Data Protection, Privacy and Consenting: A Simple Guide to the ADPC-IoT Mobile App

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## Why Privacy and Digital Rights Matter

Privacy is a fundamental right that protects your personal information and ensures you remain in control of how it is used. In today's digital age, data is collected about us almost everywhere, often without our full understanding. Protecting your privacy is about ensuring you can decide who gets access to your information and how it is used.

## How Your Data is Collected

In various environments, a lot of information about you is collected. For example:

- **Online Browsing:** Websites track your searches, clicks, and purchases.
- **Public Spaces:** Cameras, Wi-Fi hotspots, and sensors may record your activity or location.
- **At Home:** Devices like smart speakers, thermostats, and cameras collect data about your habits and preferences.

## What is IoT

The Internet of Things (IoT) refers to everyday devices connected to the internet to make life easier. Examples include:

- **Smart Home Devices:** Thermostats, security cameras, and voice assistants like Alexa.
- **Wearables:** Smartwatches or fitness trackers that record your health data.
- **Smart Cities:** Sensors in traffic lights or public spaces that monitor air quality or manage energy use.

These devices often collect data such as your location, habits, or even sensitive information like your health stats!

## Your Legal Rights

You have legal rights to protect your data:

- Know what data is being collected.
- Give or withdraw consent for data collection.
- Request the deletion of your data.
- Control how your data is shared.

These rights, enforced by regulations like GDPR, ensure that YOU remain in charge of your personal information.

## The ADPC-IoT Framework

The Advanced Data Protection and Control for IoT (ADPC-IoT) framework was created to help you take control of your privacy in IoT environments. It provides a clear and standardized way for IoT devices to ask for your consent and for you to manage that consent easily. With ADPC-IoT, privacy becomes simpler and more transparent, allowing you to make informed decisions about your data.

The **ADPC-IoT Mobile App** is designed to give you full control over your privacy when using IoT devices.

It is a user-friendly app that lets you manage, approve, or withdraw consent for IoT devices in just a few taps.

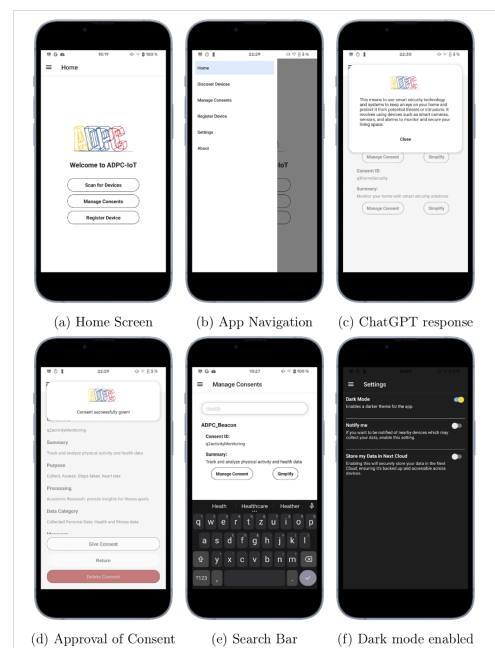
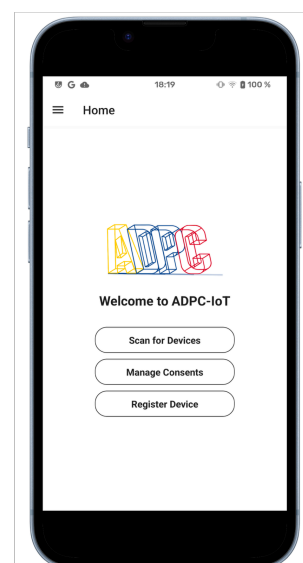


Figure O — Overview of the ADPC-IoT Mobile App

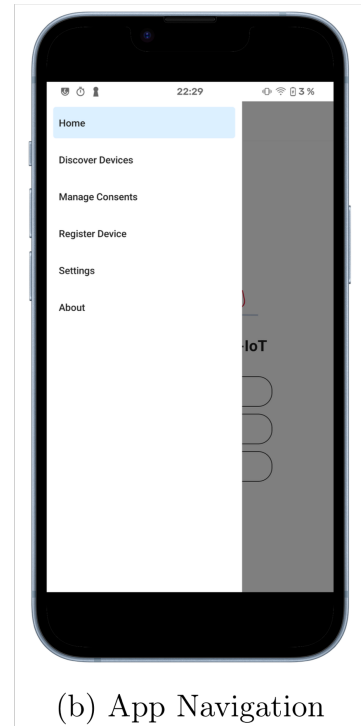
- The **Home Screen** provides three main options:
  - **Scan for Devices:** Find nearby IoT devices to connect and manage.
  - **Manage Consents:** View or edit consents you've already given.
  - **Register Device:** Add new IoT devices to your account.



(a) Home Screen

Figure a — Home Screen

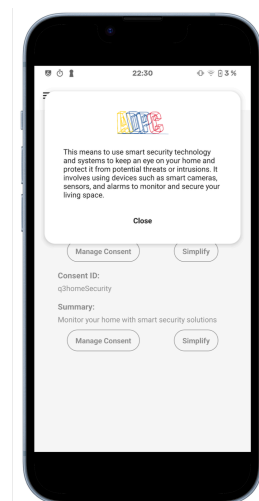
- The **App Navigation** makes it easy to switch between sections:
  - **Home:** Return to the main screen.
  - **Discover Devices:** Scan for and interact with new IoT devices.
  - **Manage Consents:** Search, review, and manage existing consents (Figure E shows the search bar for managing consents).
  - **Register Devices:** Add IoT devices.
  - **Settings:** Adjust preferences and enable features like dark mode.
  - **About:** Learn more about the app.



(b) App Navigation

Figure b — App Navigation

- **Simplify Requests with AI:**
  - When an IoT device sends a privacy request, the app provides an explanation using Generative AI (Figure C). By clicking “Simplify,” you can receive a clear and user-friendly description of what the request entails, making it easier to understand and decide.

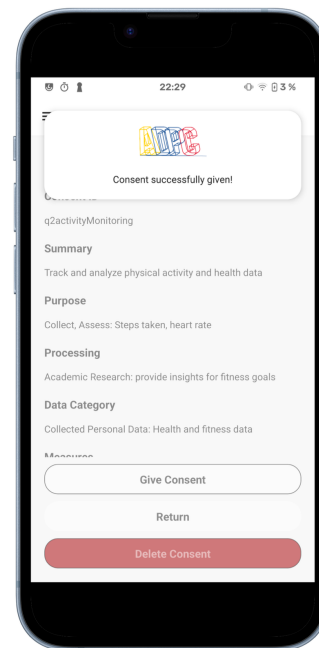


(c) ChatGPT response

Using ChatGPT serves as a proof-of-concept for a functional prototype. In subsequent iterations of the implementation, it is essential to address and prioritize the privacy considerations associated with the use of generative AI technologies.

Figure c — Generative AI

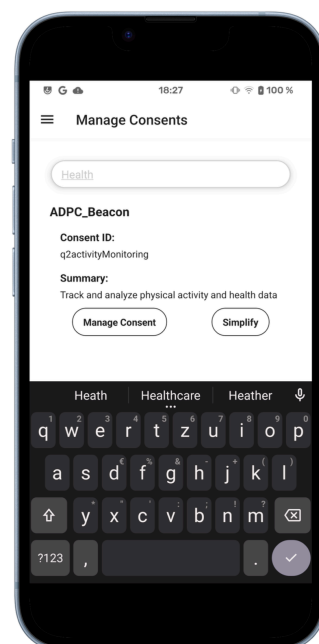
- When you receive a consent request (Figure d), the app allows you to:
  - **Give Consent:** Approve the request.
  - **Return:** Decide later.
  - **Delete Consent:** Decline and remove your consent.



(d) Approval of Consent

Figure d — Approval of consent

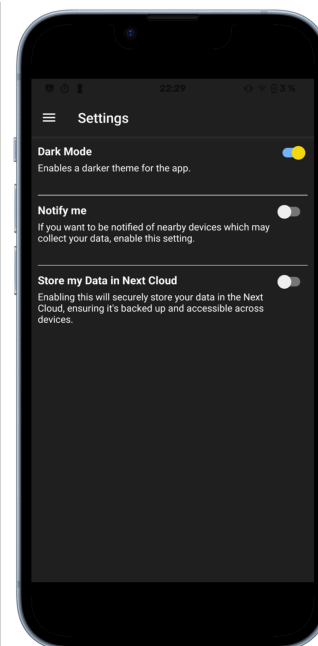
Use the **Manage Consents** section to **search** for any consent you've given. You can modify, delete, simplify or review them as needed.



(e) Search Bar

Figure e — Manage Consents

- In the **Settings** section (Figure f), you can:
  - Enable **Dark Mode** for a more comfortable viewing experience.
  - Set up **notifications** to stay updated on privacy requests.
  - **Configure a NextCloud account** to back up your consents securely.



(f) Dark mode enabled

Figure f — Settings

## Getting Started with the App

- **Download the App:** Available on iOS and Android devices.
- **Scan for Devices:** Ensure the IoT device supports Bluetooth Low Energy (BLE), ADPC-IoT and is nearby.
- **Manage Consents:** Approve, modify, or withdraw data permissions with ease.
- **Simplify Requests:** Use the AI assistant to understand privacy terms clearly.

## Why Use the ADPC-IoT Mobile App

With the ADPC-IoT Mobile App, you take control of your privacy:

- Understand exactly what data is being collected.
- Decide whether to share your data and with whom.
- Make informed decisions with AI assistance.
- Ensure your consents are backed up securely.

By using this app, you gain confidence in how your data is handled, ensuring your rights and privacy are protected in an increasingly connected world. The user-friendly interface and advanced features make managing your data a simple and intuitive process.

## Project Websites

- <https://www.netidee.at/respected-iot>
- <https://www.dataprotectioncontrol.org>
- <https://github.com/Data-Protection-Control>
- <https://www.sustainablecomputing.eu>

If you are interested in exploring more about our work and engaging with academic texts, below is a bibliography of some of our previous publications.

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