A Simple Guide to Privacy, Your Digital Rights, and the ADPC-IoT Mobile App

Human, Soheil; Koczan, Felix

Published: 01/12/2024

[Link to publication](#)

A Simple Guide to Privacy, Your Digital Rights, and the ADPC-IoT Mobile App

Soheil Human, Felix Koczan
Sustainable Computing Lab, Institute for Information Management and Control
Vienna University of Economics and Business, Austria
soheil.human@wu.ac.at

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.
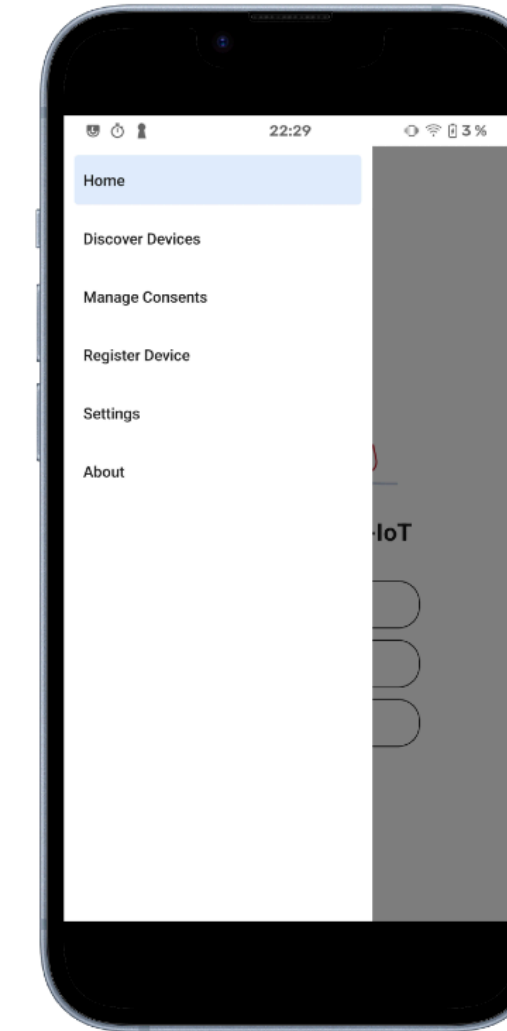
With ADPC-IoT, privacy becomes simpler and more transparent, allowing you to **make informed decisions about your data**.

The
ADPC-IoT Mobile App is designed to give you full control over your privacy when using IoT devices.
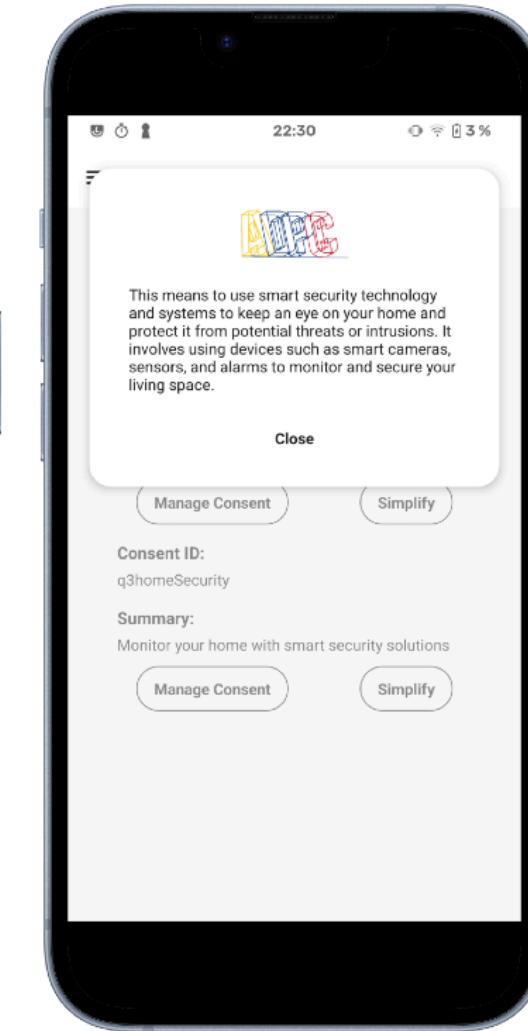
It is a user-friendly app that lets you manage, approve, or withdraw consent for IoT devices in just a few taps.
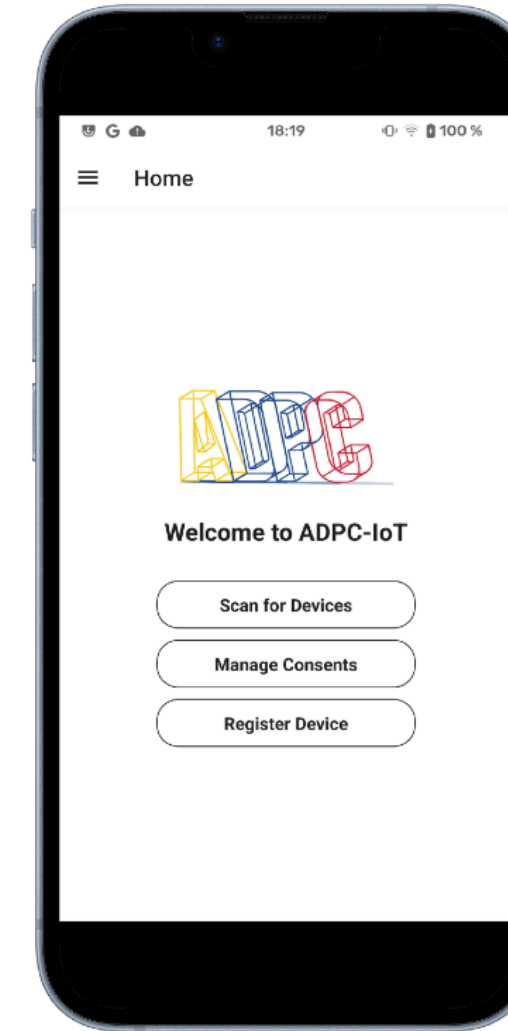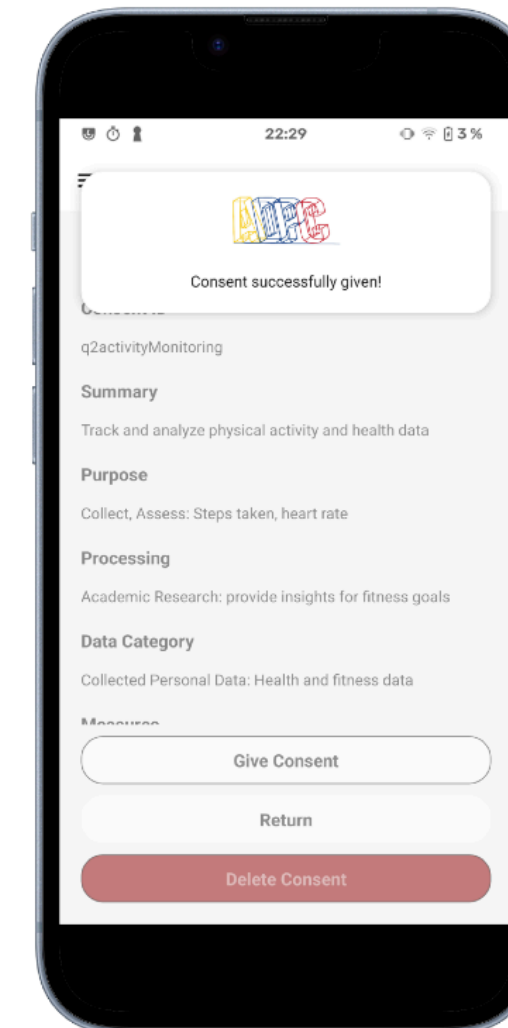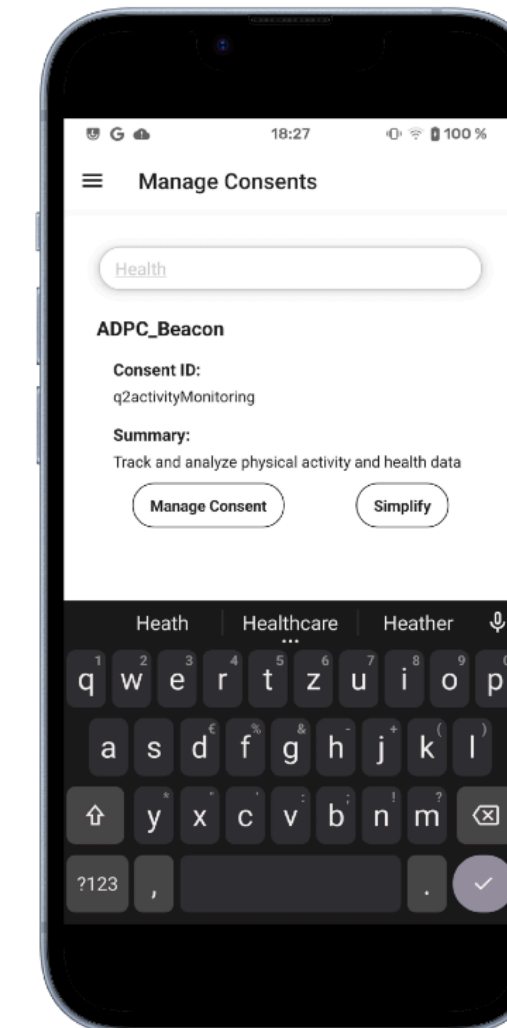

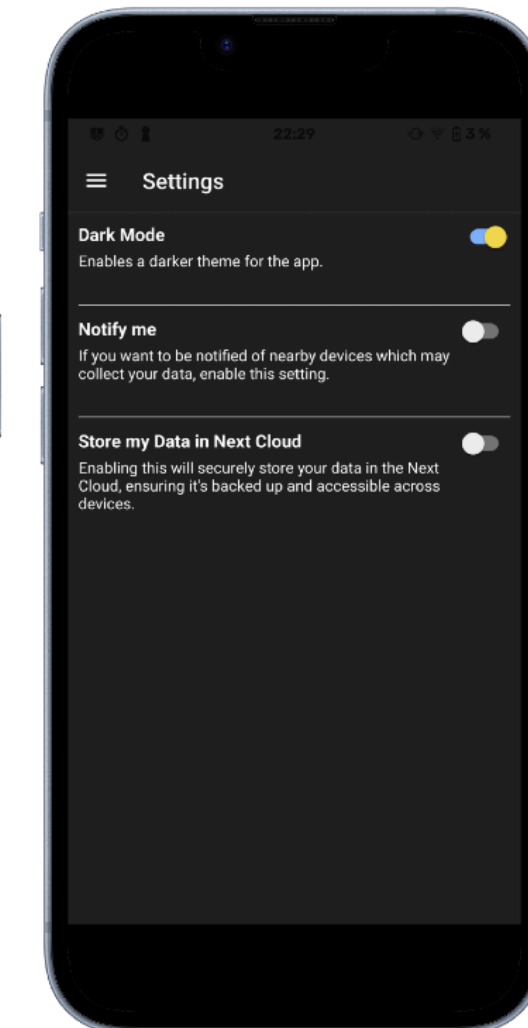(a) Home Screen   (b) App Navigation   (c) ChatGPT response
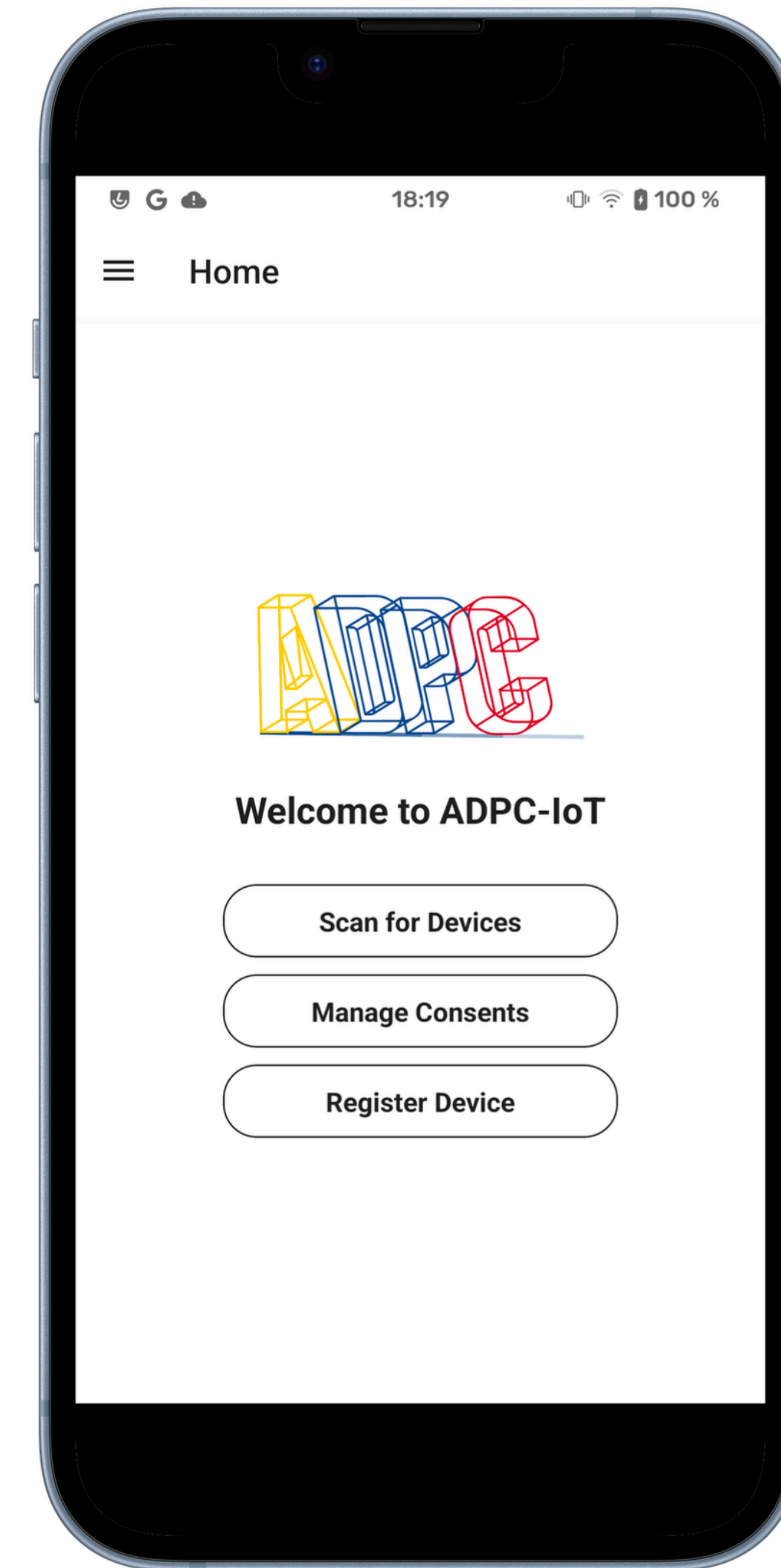
(d) Approval of Consent   (e) Search Bar   (f) Dark mode enabled

- 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

- 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.
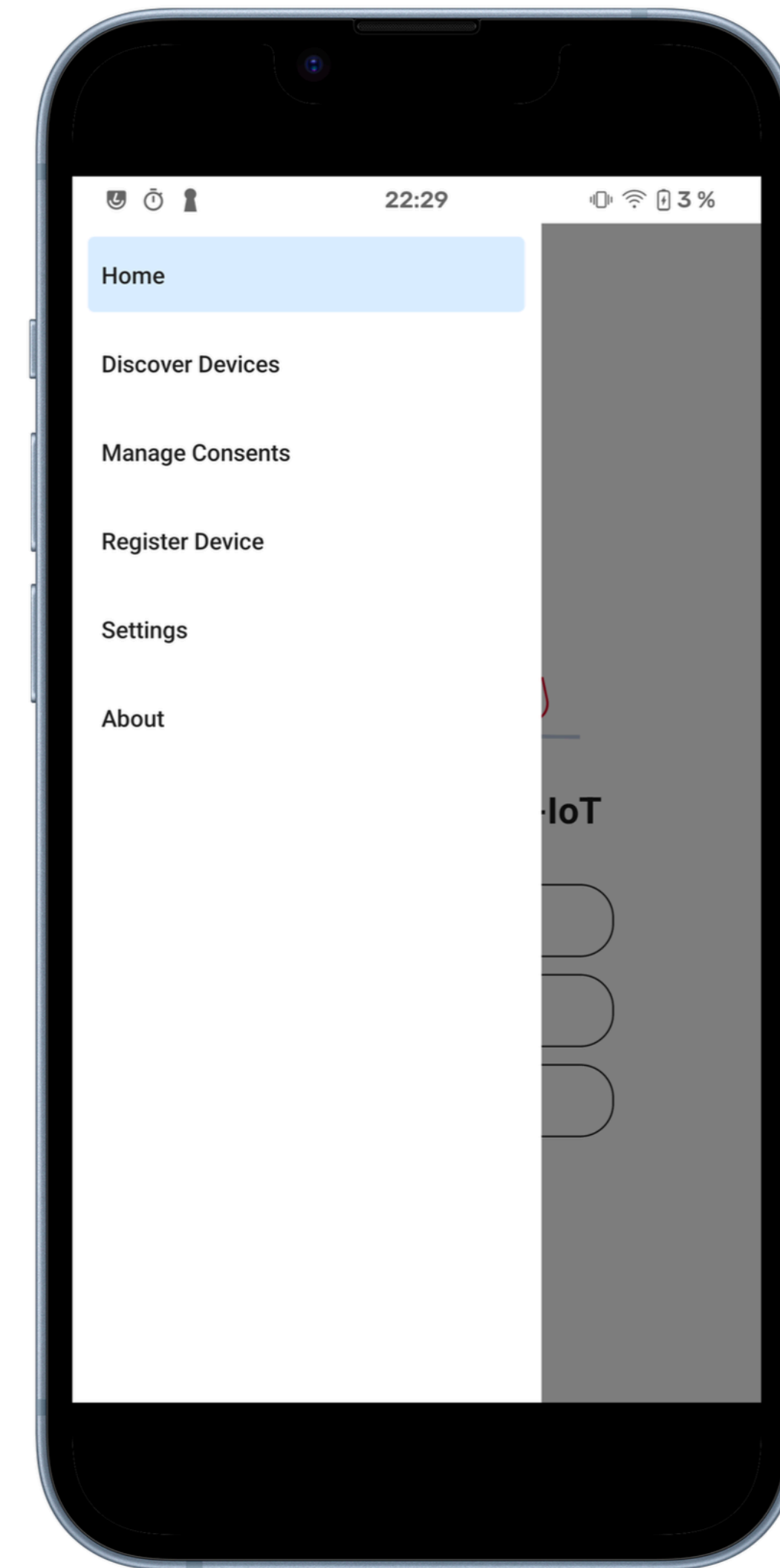
(b) App Navigation

- **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.
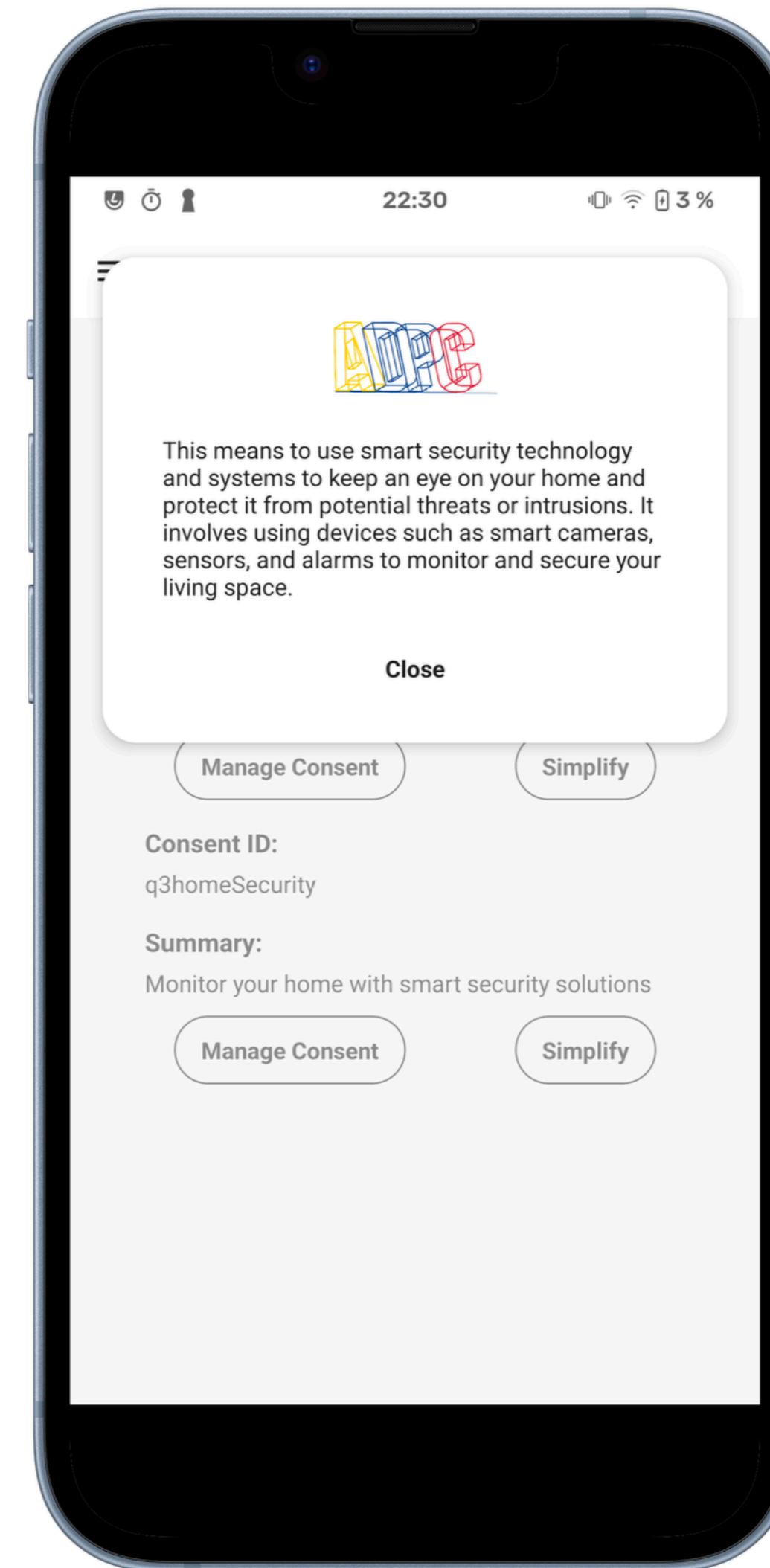
(c) ChatGPT response

- 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.
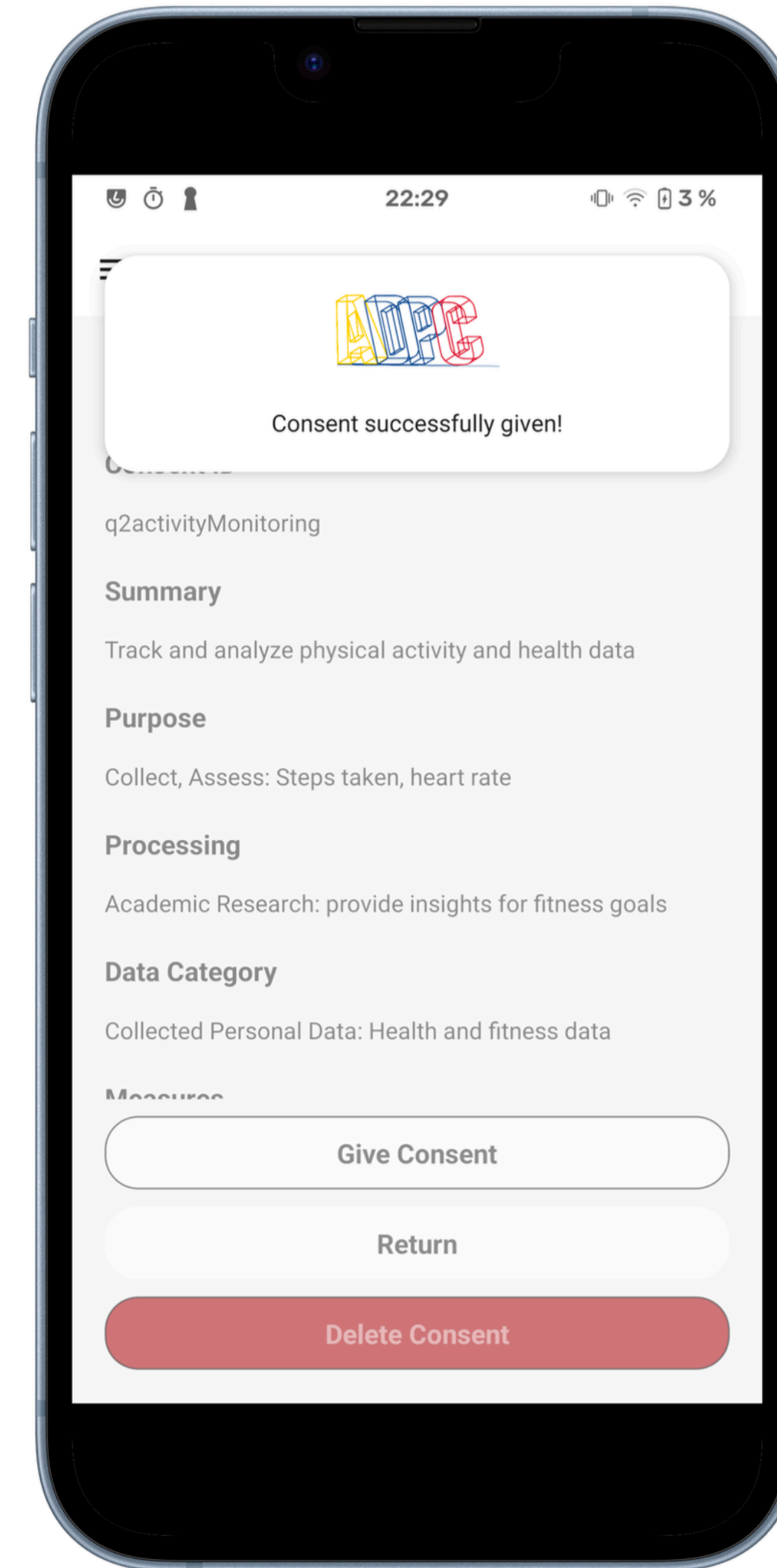
(d) Approval of Consent

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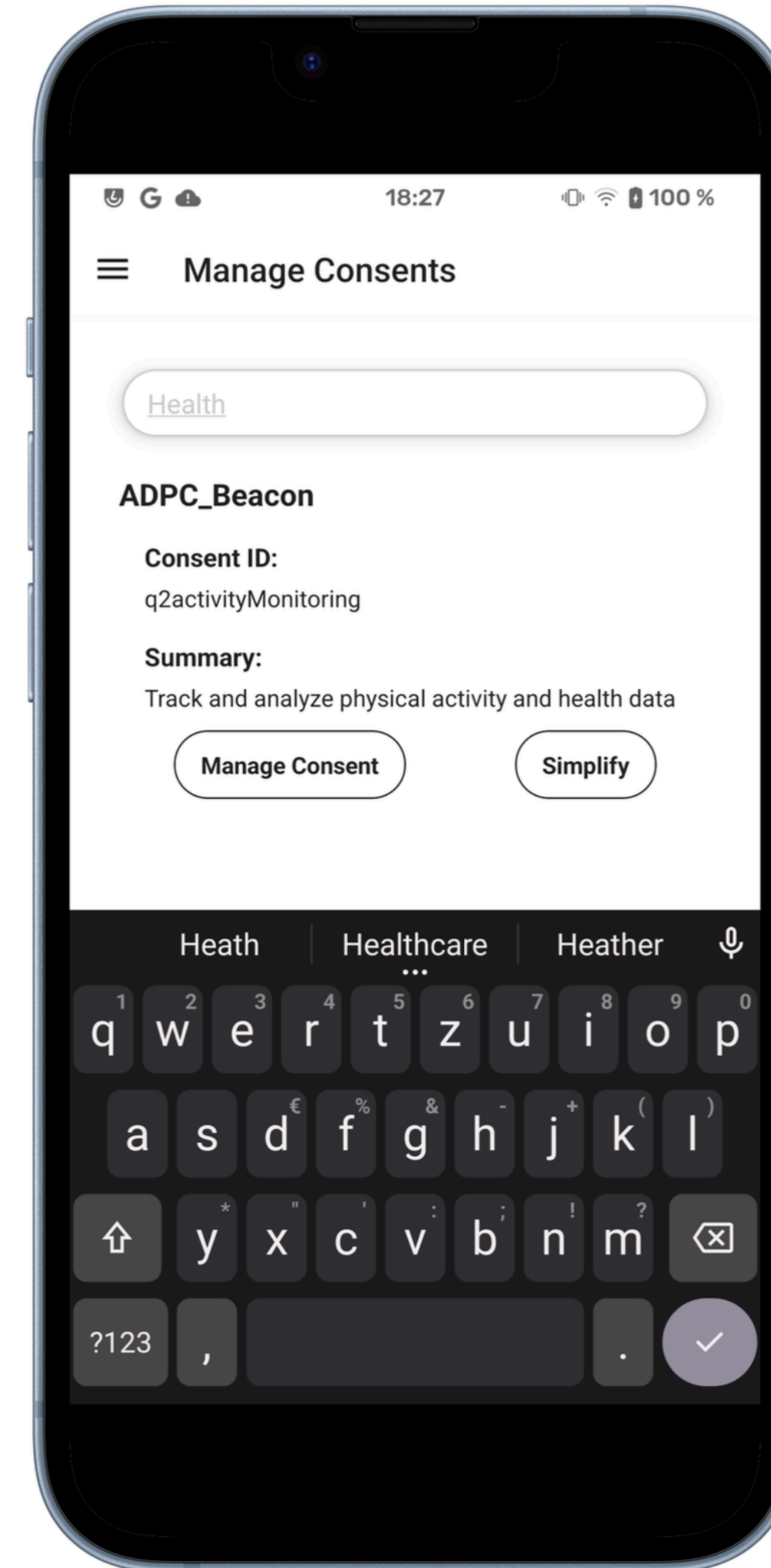
(e) Search Bar

- 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.
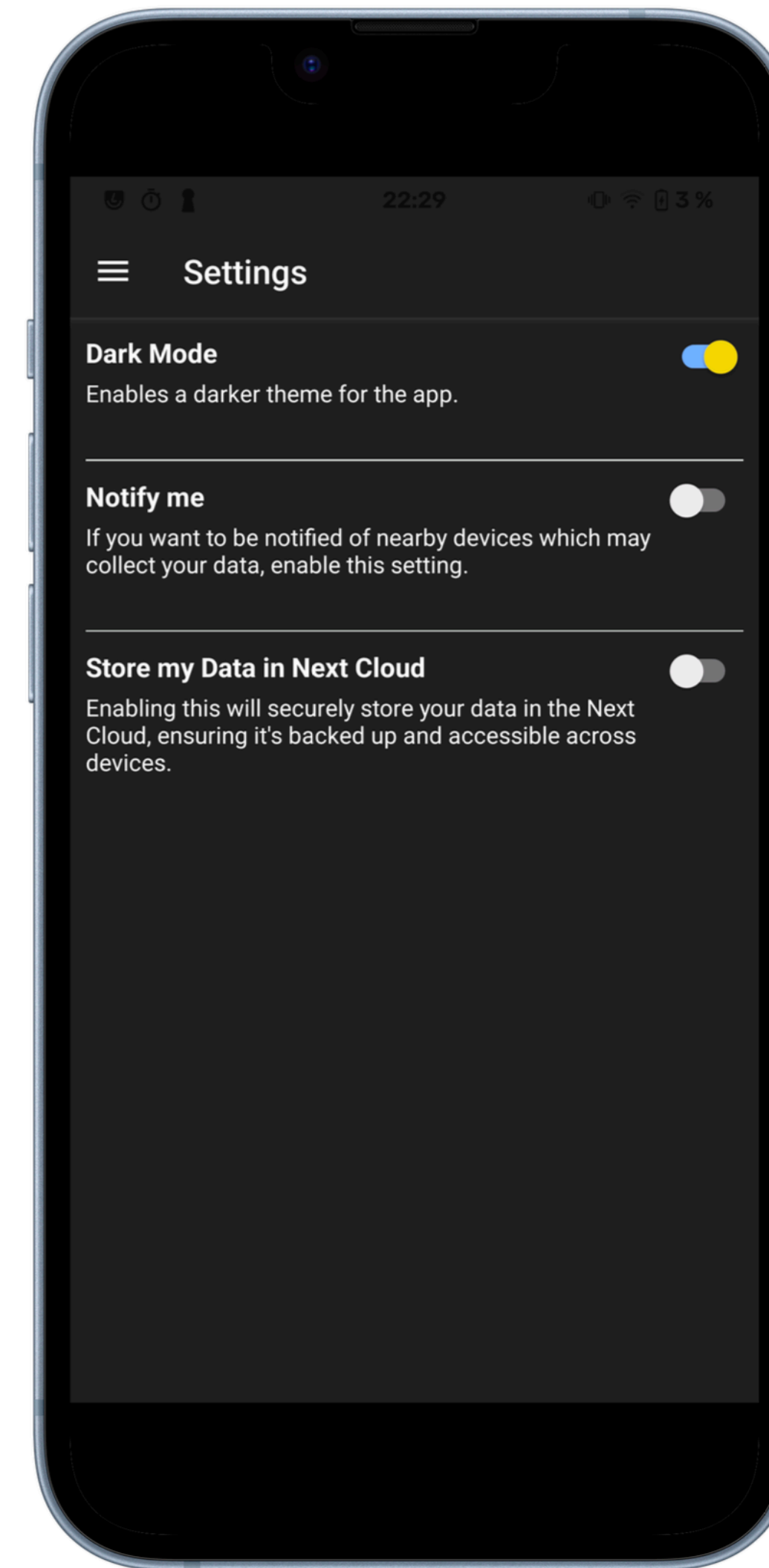
(f) Dark mode enabled

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.

Bibliography

Alt, Rainer, Soheil Human, and Gustaf Neumann. 2020. "End-User Empowerment in the Digital Age." Edited by null Tung Bui. Proceedings of the 53rd Hawaii International Conference on System Sciences, 4099–4101.

Human, Soheil. 2022a. "Advanced Data Protection Control (ADPC): An Interdisciplinary Overview." arXiv. https://doi.org/10.48550/arXiv.2209.09724.

Human, Soheil. 2022b. Really Enforceable Solution to Protect End-Users Consent & Tracking Decisions. Sustainable Computing Reports and Specifications. https://doi.org/10.57938/fefe9b84-b00f-42d9-bd7e-0f6ea391e88c.

Human, Soheil. 2024a. "Human-Compatible Digital Protection, Consenting and Controlling." PhD Thesis, Vienna, Austria: Vienna University of Economics and Business.

Human, Soheil. 2024b. "Humans [Plural] in The Loop: The Forgotten Collective Aspects of Privacy, Consenting, Controlling and Digital Protection." Frontiers in Political Science 6 (September). https://doi.org/10.3389/fpos.2024.1391755.

Human, Soheil, Rainer Alt, Hooman Habibnia, and Gustaf Neumann. 2022. "Human-Centric Personal Data Protection and Consenting Assistant Systems: Towards a Sustainable Digital Economy." In Proceedings of the 55th Hawaii International Conference on System Sciences.

Human, Soheil, and Florian Cech. 2020. "A Human-Centric Perspective on Digital Consenting: The Case of GAFAM." In Human Centred Intelligent Systems: Proceedings of KES-HCIS 2020 Conference. https://doi.org/10.1007/978-981-15-5784-2_12.

Human, Soheil, Rita Gsenger, and Gustaf Neumann. 2020. "End-User Empowerment: An Interdisciplinary Perspective." Edited by null Tung Bui. Proceedings of the 53rd Hawaii International Conference on System Sciences, 4102–11.

Human, Soheil, and Mandan Kazzazi. 2021. "Contextuality and Intersectionality of E-Consent: A Human-Centric Reflection on Digital Consenting in the Emerging Genetic Data Markets." In 2021 IEEE European Symposium on Security and Privacy Workshops (EuroS&PW).

Human, Soheil, Gustaf Neumann, and Rainer Alt. 2021. "Human-Centricity in a Sustainable Digital Economy." In Proceedings of the 54th Hawaii International Conference on System Sciences.

Human, Soheil, Gustaf Neumann, and Rainer Alt. 2022. "A Call for Interdisciplinary Research on Applied Human-Centricity in a Sustainable Digital Economy." Edited by Tung X. Bui. Proceedings of the 55th Hawaii International Conference on System Sciences.

Human, Soheil, Gustaf Neumann, and Rainer Alt. 2023. "Human-Centricity of Digital Economies: From Concepts to Assessment Methodologies, Case-Based Studies, Solutions and Beyond." Proceedings of the 56th Hawaii International Conference on System Sciences.

Human, Soheil, Gustaf Neumann, and Rainer Alt. 2025. "Co-Production of Human-Centricity and Digital Sustainability in Information Systems." In Proceedings of the 58th Hawaii International Conference on System Sciences.

Human, Soheil, Gustaf Neumann, and Markus F. Peschl. 2019. "[How] Can Pluralist Approaches to Computational Cognitive Modeling of Human Needs and Values Save Our Democracies?" Intellectica 70:165–80.

Human, Soheil, Harshvardhan J. Pandit, Victor Morel, Cristiana Santos, Martin Degeling, Arianna Rossi, Wilhelmina Botes, Vitor Jesus, and Irene Kamara. 2022. "Data Protection and Consenting Communication Mechanisms: Current Open Proposals and Challenges." In 2022 IEEE European Symposium on Security and Privacy Workshops (EuroS&PW). IEEE. https://ieeexplore.ieee.org/abstract/document/9799369/.

Human, Soheil, Max Schrems, Alan Toner, null Gerben, and Ben Wagner. 2021. "Advanced Data Protection Control (ADPC)." Advanced Data Protection Control (ADPC), Sustainable Computing Reports and Specifications. https://doi.org/10.57938/149a03c3-2f39-4ca0-8ff7-be7f8ded61b8.

Morel, Victor, Cristiana Santos, Yvonne Lintao, and Soheil Human. 2022. "Your Consent Is Worth 75 Euros A Year - Measurement and Lawfulness of Cookie Paywalls." In Proceedings of the 21st Workshop on Privacy in the Electronic Society, 213–18. Los Angeles CA USA: ACM. https://doi.org/10.1145/3559613.3563205.