



PINK ELEMENTS
enable environmental engagement

Pink Elements White Paper

(WIP)

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Part I - Abstract

While growing towards 10 billion people and with global living standards on the rise, mankind is heading into an age of more densely populated cities and further increasing pollution. Climate change will impact our environment and resources significantly, including our drinking water.

We will only succeed in providing an effective response to these upcoming challenges, if we base our decisions on a profound basis of data, if we share our knowledge to accelerate our learning-process, if we bring awareness to the people and empower them to change things for the better.

Pink Elements (PE) was born to create a self-sustaining and global social platform for sharing environmental data with access for everyone. A protected space, with reliable data, transparent and secured by blockchain technology.

The following paper discloses the challenges Pink Elements will help to answer, the technologies that Pink Element will apply and the mechanisms that will make the Pink Elements network the world's largest environmental database.

Part II - Vision and Mission

The Pink Vision says, that easy to understand information about drinking water quality, up-to-date and transparent, will sustainably...

- change consumer behavior,
- impact travel destinations and arrangements,
- influence investment decisions, i.e. in real estate and much more.

By building the world's largest platform for environmental data...

- a) decentralized,
- b) AI-empowered,
- c) easily accessible,
- d) powered and organized by a self-driven community

... Pink Elements gives everyone free access to environmental information that is critical to the personal health and well-being.

Pink Elements is all about providing a platform that gets people informed, enables them to make the right decisions for themselves and their communities. Contribute, engage, organize and change things for the better.

Part III - Our Challenging Future

By 2050 the earth will host 10 billion people (+20% compared to today) [1]. 70% of people will by then live in urban areas [2].

Average temperatures will most likely have gone up by at least 1.5 °C, in some regions 2 °C (or even 2.8 °C [5]) compared to pre-industrialization [3]. The arctic will be free of ice in summer [4]. The glaciers in the Alps will have reduced by 50% - 90% by then [5].

About 4 billion people, representing nearly two-thirds of the global population, already today experience severe water scarcity during at least one month of the year. "Nearly half the global population are already living in potential water-scarce areas at least one month per year and this could increase to some 4.8-5.7 billion in 2050. About 73% of the affected people live in Asia (69% by 2050)" [6].

Rising sea levels intruding into ground-water threaten large parts of coastal ground-water sheds [7]. Increased temperatures will promote growth of

algae and pathogens in drinking water reservoirs [8, 9]. The frequency and duration of extreme weather conditions, like drought, monsoon and storms will challenge management of water resources [10]. Storm-water will endanger drinking water-distribution by flooding Megacities. Alpine regions, who have relied on glaciers as drinking water storage for summer seasons in the past, will have to re-think their water-supply [5].

Atop of having to extent water-, stormwater- and wastewater-infrastructures in response to ongoing urbanization and climate change, cities are facing the urging need to refurbish their existing ageing infrastructures [11]. The Organization for Economic Co-operation and Development (OECD) predicts the demand for water to increase by 55% in urban areas by 2050 [12].

“In New York State, 10,147 regulated water systems provide clean water to 20 millions of New York’s citizens. Nearly 95% of New York’s population receives water from the state’s public water supply systems. Unfortunately, 95% of the submitted improvement projects to the Drinking Water State Revolving Fund pro gramme remain unfunded due to the overwhelming demand. The latest estimate of repairing, replacing, and updating New York State’s drinking water infrastructure is \$38.7 billion over 20 years. With almost half of New York City’s pipes put in place prior to 1941, it would take 100 years or more to upgrade its ageing pipes at current replacement rates. From frequent pipe breaks to large system upgrades to rebuilding from storm damages, New York State’s ageing drinking water network has no shortage of challenges.” [12]

Part IV - Awareness and Empowerment

According to Water Quality Association (WQA), the U.S. water industries’ organization, 51% of all U.S. citizens are at least concerned, if not very

concerned, about their tap water quality. Furthermore, almost half of U.S. consumers (48%) are concerned about tap water safety in their homes [13].

62% of Germanys inhabitants are afraid that drinking water quality will decrease due to climate changes. 39% feel insecure about water quality due to recent media coverage, mainly about Nitrate, residuals of pharmaceuticals and pathogens [14].

Globally 4 bn. people experience living under water-scarcity [6]. Already today politics and administration are not capable of securing a sufficient supply of safe and clean drinking water, nor do they secure its quality. Population growth, urbanization, climate change, progressing environmental pollution and ageing infrastructure will overwhelm our officials even more in future.

The availability of clean and safe drinking water quality affects everyone, everywhere, every day. Awareness about the importance of availability of clean drinking water its omnipresent, but where do we get the information, we need in order to secure and improve its quality and availability? Who can we team up with to create an impact?

It is obvious that for decades politics has failed to manage drinking water infrastructure. People need to be empowered to learn about the challenges and urging needs their water supplies are facing, so they change things to the better.

Access to clean and safe drinking water is an unalienable human right. People need to get the information and means into their hands to understand, judge, communicate, stand up, organize and take action.

Part V - The Pink Elements Commitment

Pink Elements was born to create a self-sustaining and global social platform for sharing environmental data with access for everyone. A protected space, with reliable data, transparent, AI explained and secured by blockchain technology.

- i. We will provide a data platform for all kind of environmental quality data available and make it accessible to everyone. The Pink Elements Platform (PEP) will support the collection of Public Water Quality Data (PWQD) that is available online, starting from defined focus areas to global coverage later on. Once the PEP architecture is built to a product-release level, global roll-out will commence along most relevant cities and regions. In future, further strains of data will be included in the databases, such as air quality, noise emission, soil contamination or other topics.
- ii. We will offer everyone the opportunity to share environmental quality data.
- iii. We will leave the ownership of data with those who provide it.
- iv. We will store data uncensored on the blockchain.
- v. We will pass through fees for data usage to those who own the data. Usage of data will be subject to a usage fee, which the owner of the data can freely determine. PE will only require a transaction fee for maintaining and growing PEP. Fees will be paid in Pink Token, in a simple process from and to a token-wallet.
- vi. We will include latest AI technologies to make data more meaningful. PE will implement machine learning to learn from changes of data in the past. PE will also connect different layers of data, such as e.g., water quality data, weather data and geological data to predict mutual influence.
- vii. We will provide a platform for the exchange of information and experience. Here it is possible to have an open debate even about uncomfortable truths about our environment.
- viii. We will create most easy-to-use interfaces.

- ix. We will support environment-related and community-driven initiatives.
- x. We will build a platform to create the world's biggest environmental community.

Part VI - Product and Technology

1 Technology Stack

Pink Elements is built on a modern technology stack that is designed to be scalable, secure, and transparent.

The development of our mobile application relies on a robust technology stack that enables us to create a user-friendly, secure, and efficient platform for water quality data access.

The back-end architecture is based on a service-oriented architecture (SOA) pattern, which allows for loose coupling and independent deployment of components. This makes the platform easy to scale and maintain, and it also allows for new features to be added easily.

Our choice of technologies aligns with our goal to provide a seamless user experience while ensuring data security and integrity. The key components of our technology stack include:

Cross-Platform Development: We have adopted React Native as our primary framework for mobile application development. This choice allows us to build a single codebase that runs on both Android and iOS platforms, optimizing development time and resources. React Native's extensive library of pre-built components also facilitates rapid development and ensures a consistent user experience across devices.

Back-end Development: TypeScript with Nest NodeJS framework - TypeScript is a superset of JavaScript that offers additional features such as type safety. Nest is a progressive Node.js framework that makes it easy to build scalable and maintainable server-side applications.

Postgres database: Postgres is a powerful and scalable relational database that is well-suited for storing user data, map data, wallet balance, and other data.

MongoDB database: MongoDB is a NoSQL database that is well-suited for storing unstructured data, such as recognized reports.

Google Maps SDK: The Google Maps SDK is used to handle location data and display maps on the Pink Elements mobile app.

Authentication: For user authentication and access control we rely on Auth0. This industry-standard authentication service streamlines the login and registration process for our users, providing a secure and efficient way to access the application.

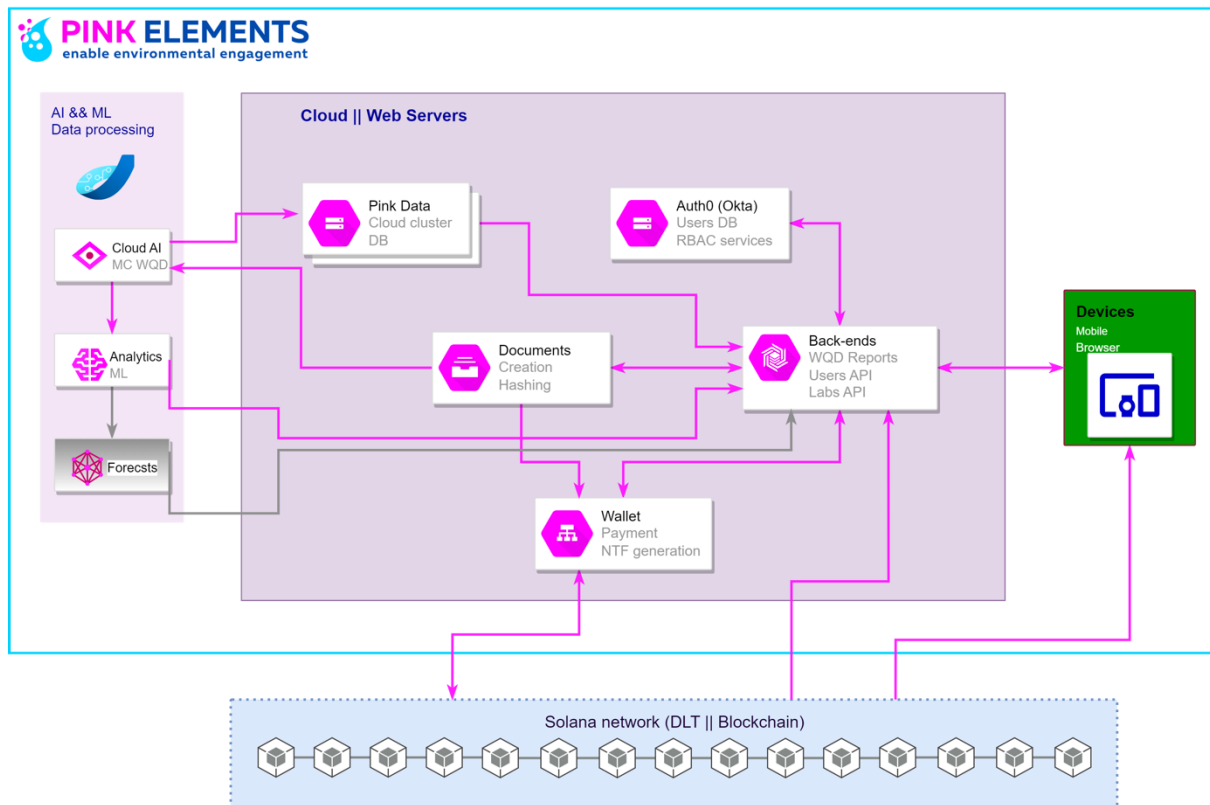
Blockchain Technology: To handle token transactions and ensure transparent, immutable data access, we leverage the Solana blockchain. Our native token, PINK Token, is built on Solana, allowing users to make token-based purchases, rewards, and transactions within the application. The Solana blockchain is known for its scalability, speed, and low transaction costs, making it an ideal choice for our decentralized application (DApp). Furthermore, we utilize Solana's blockchain capabilities to enable the transparent transfer of documents. The data (represented by the hash of the document) can be securely transferred from its owner to any user who wishes to purchase it, ensuring that the document's ownership and integrity are maintained.

Cloud Services: Our application's scalability and reliability are supported by Azure cloud services. We deploy our backend services to the Azure cloud, allowing for horizontal and vertical scaling as needed to accommodate a growing user base. This cloud infrastructure ensures high availability and performance for our users.

PDF Recognition: To process and extract information from PDF documents in various languages, including English and German, we rely on Azure AI Document Intelligence. This service uses advanced recognition and parsing capabilities to extract valuable data from uploaded PDFs. It ensures that the information provided is accurate and readily available to users.

OpenAI Integration: For AI analysis and interpretation of water quality data, we have integrated Azure OpenAI ChatGPT 3.5. Users can request analyses in various formats, including easy-to-understand, scientific, or humorous summaries. Each analysis request consumes 1 PINK token, and the transaction fee is directed to the designated account.

Our chosen technology stack reflects our commitment to providing users with a secure, efficient, and user-friendly platform for accessing water quality data. It also aligns with our vision of a community-driven data ecosystem built on blockchain technology, ensuring transparency, trust, and data integrity, including the transparent transfer of documents among users.

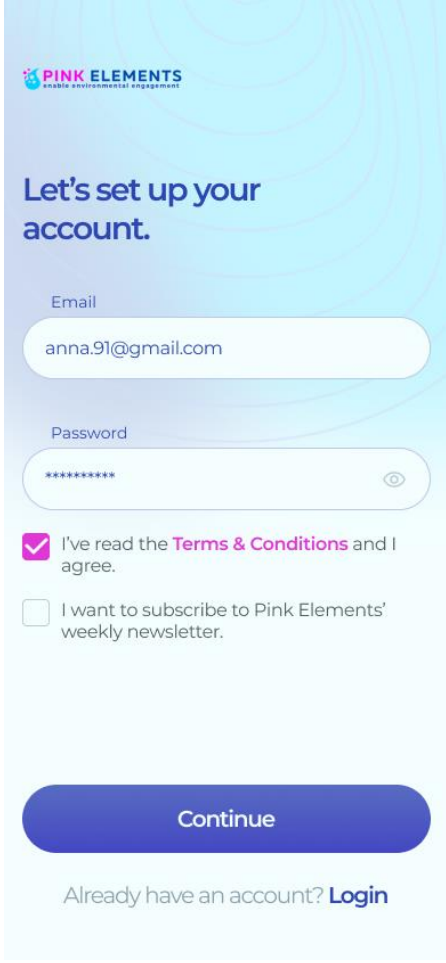


2 User Experience of Mobile DApp

The user experience (UX) of our mobile application is designed to be intuitive, user-friendly, and engaging. It centers around the ease of access to water quality data, making it both informative and interactive. The following section details the user journey within the application, describes the main screens, emphasizes the importance of ease of use, and highlights key features.

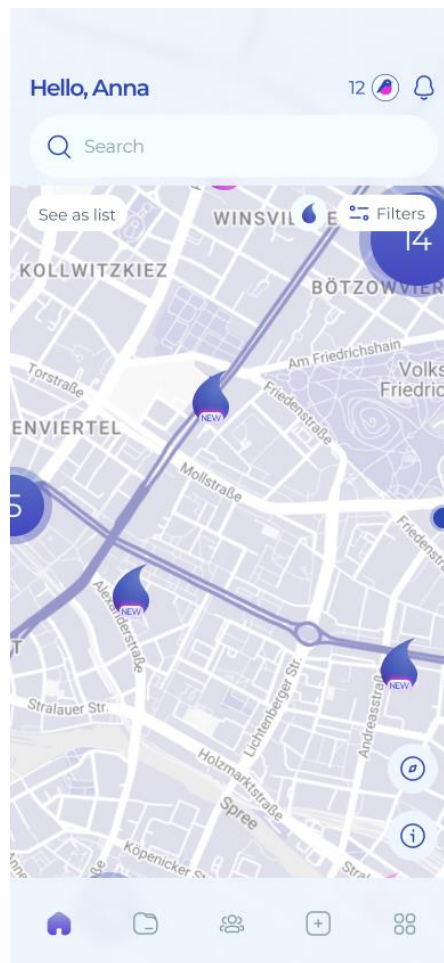
a) User Journey

- 1. Login/Register (Invitation Only):** The journey begins with the login screen, which is accessible only through an invitation link. This ensures that our user community is built on trust and accountability.

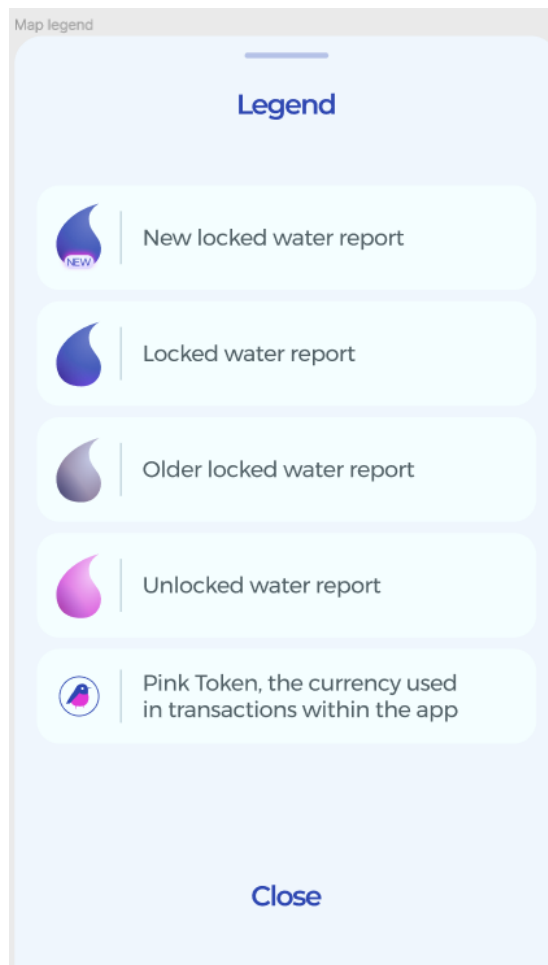


The image shows a mobile application screen for account setup. At the top left is the PINK ELEMENTS logo. The main heading is "Let's set up your account." Below this are two input fields: "Email" with the value "anna.91@gmail.com" and "Password" with a masked password "*****" and a visibility toggle icon. There are two checkboxes: the first is checked and says "I've read the Terms & Conditions and I agree.", and the second is unchecked and says "I want to subscribe to Pink Elements' weekly newsletter." At the bottom is a large blue "Continue" button and a link "Already have an account? Login".

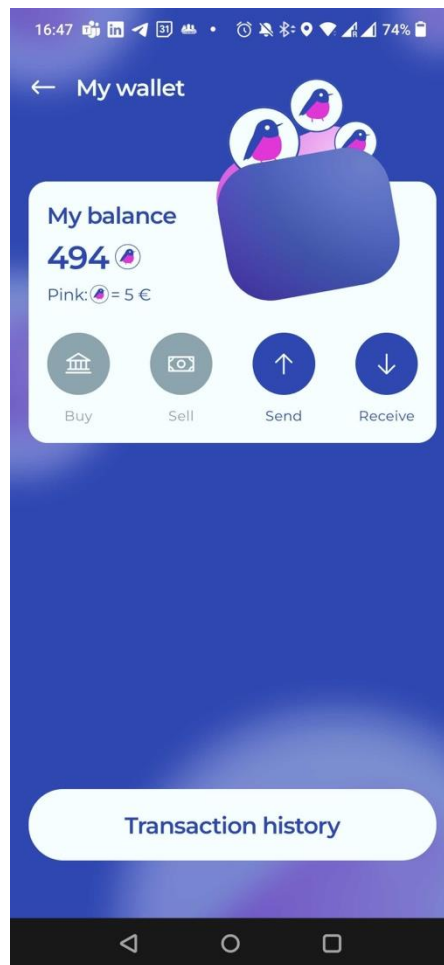
2. **Home Screen:** Upon login, users are welcomed by the home screen, which provides an interactive map with marked data points representing water quality information. Users can see their current location and nearby data points. They can zoom in and out on the map or search for specific locations to discover available data.



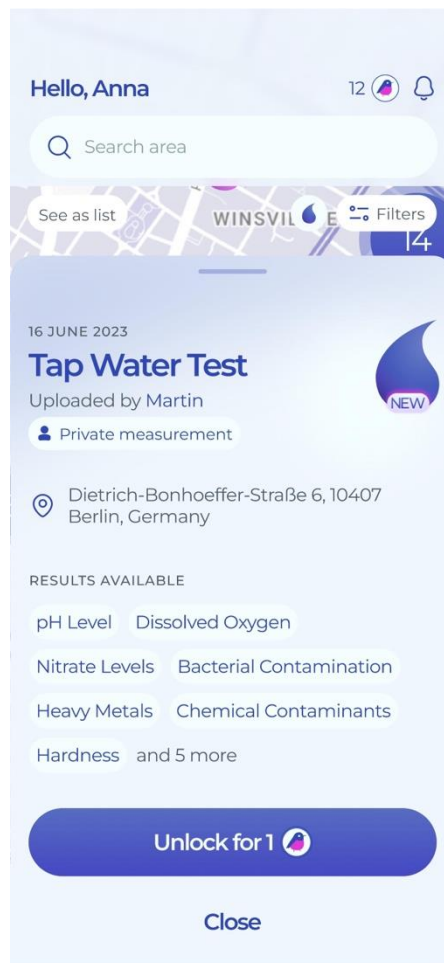
3. **Data Points on the Map:** Each data point is marked with a unique water drop icon, whose color represents the type of data:
- 3.1. Blue: Locked water analysis
 - 3.2. Blue + New: Locked + new analysis
 - 3.3. Gray-ish: Old data (time interval for "old" data is defined)
 - 3.4. Pink: Unlocked data, either the user's own data or data from other users. Users can tap on these data points to access more information.



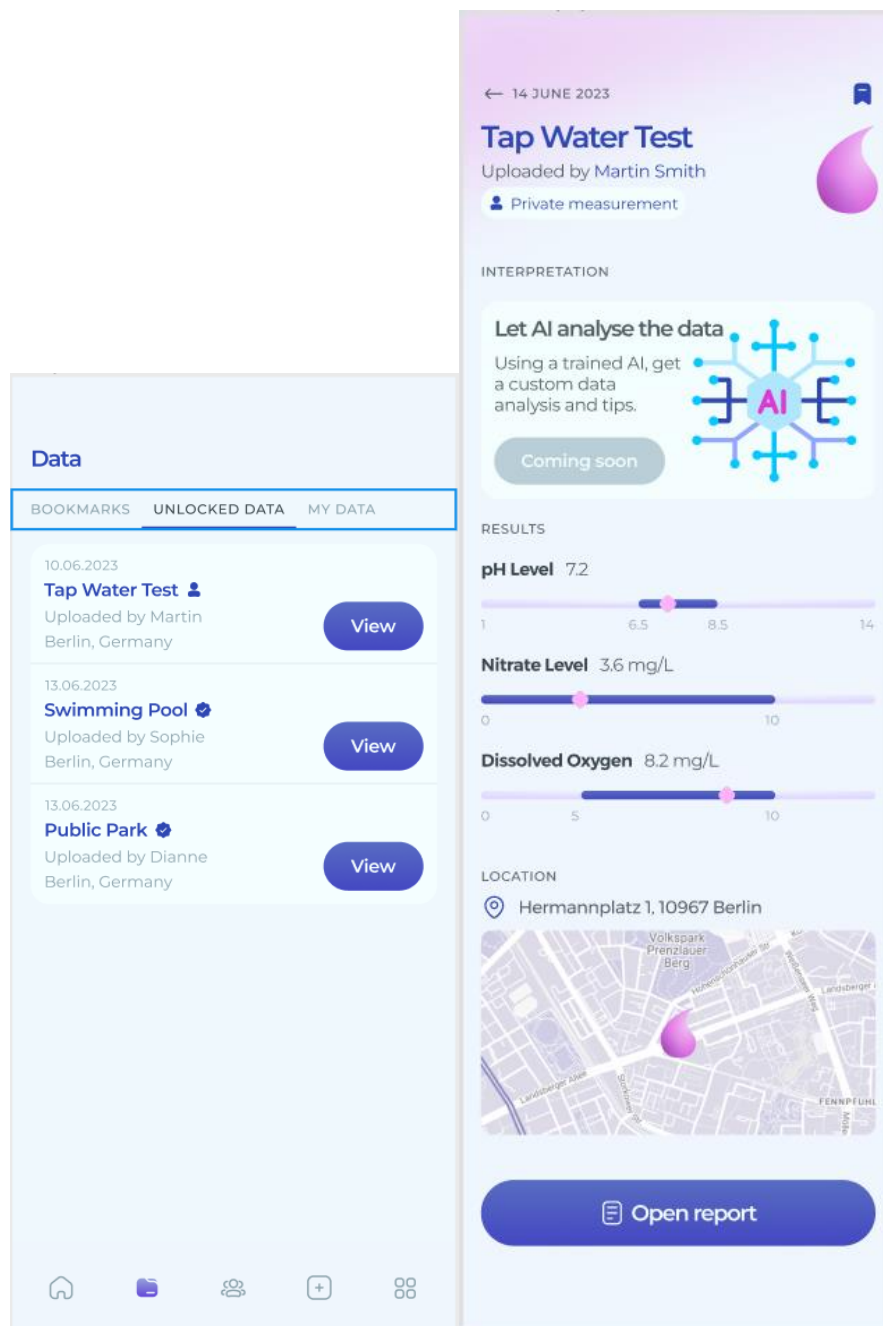
4. **Search Functionality:** The search bar allows users to search for data based on various criteria, including location, neighborhood, or area, making it easy to find the information they need.
5. **My Wallet:** Accessible via the Pink token in the header bar, users can navigate to their wallet to manage their token balance and transactions.



6. **Locked Data Analysis:** When users select a locked data point, a bottom sheet appears with a list of tags, each representing a water quality measurement. Users can tap "Unlock for 1 Token" to access the full analysis details. Unlocked data provides insights into the person or institute behind the analysis, AI interpretation, detailed results, and the option to view the original uploaded PDF.

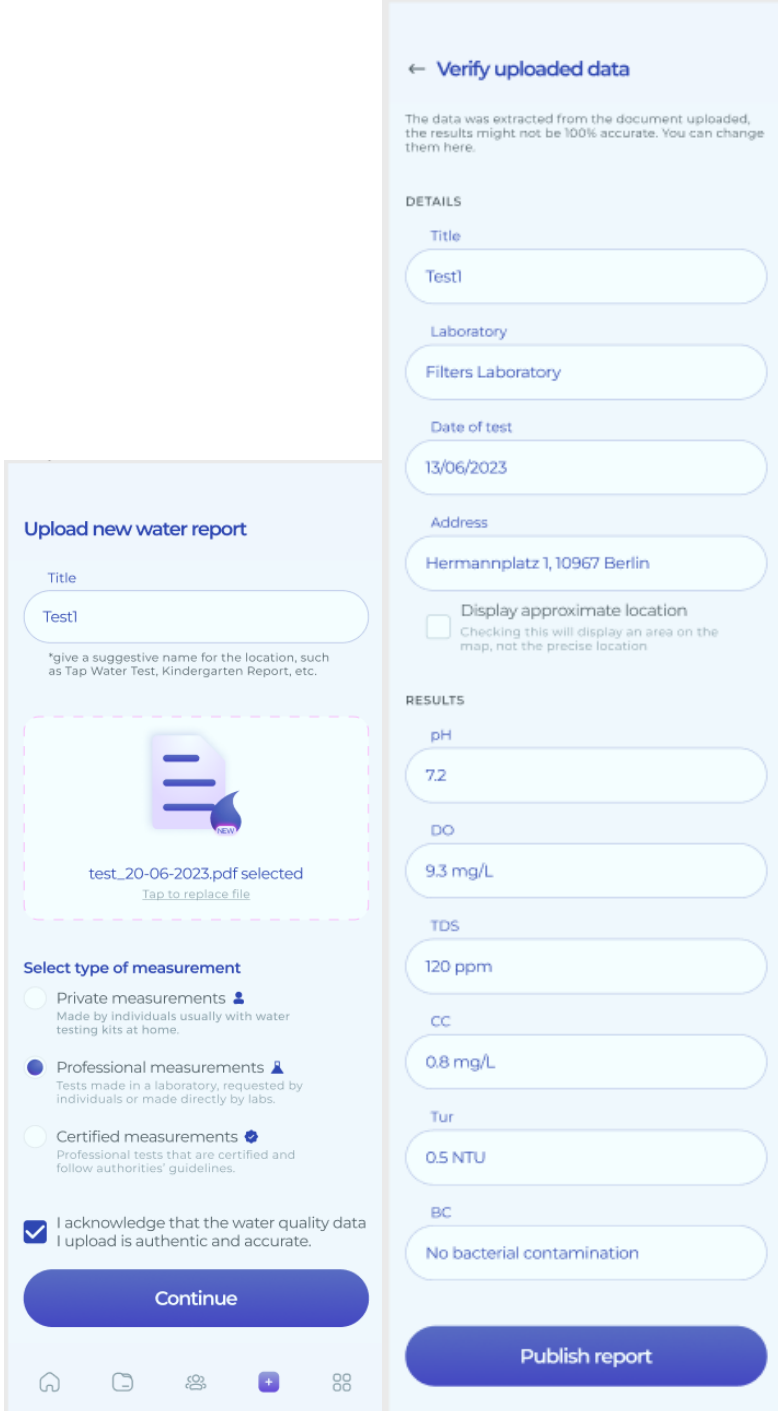


7. **Data Screen:** As the second tab in the bottom navigation bar, the Data screen offers three sections: Bookmarks, Unlocked Data, and My Data (for analysis uploaded by the user). Users can access detailed analysis from this screen.



8. **Community Screen:** By pressing the community icon in the bottom navigation bar, users can access a PWA of the NodeBB forum, encouraging community engagement.
9. **Upload Screen:** Users can upload their own water quality data, specifying the document title, type of measurement, and uploading the document

in PDF format. After successful processing, users can verify and adjust the data.






Upload new water report

Title
Test1

*give a suggestive name for the location, such as Tap Water Test, Kindergarten Report, etc.

test_20-06-2023.pdf selected
Tap to replace file

Select type of measurement

- Private measurements 
Made by individuals usually with water testing kits at home.
- Professional measurements 
Tests made in a laboratory, requested by individuals or made directly by labs.
- Certified measurements 
Professional tests that are certified and follow authorities' guidelines.

I acknowledge that the water quality data I upload is authentic and accurate.

Continue

Verify uploaded data

The data was extracted from the document uploaded, the results might not be 100% accurate. You can change them here.

DETAILS

Title
Test1

Laboratory
Filters Laboratory

Date of test
13/06/2023

Address
Hermannplatz 1, 10967 Berlin

Display approximate location
Checking this will display an area on the map, not the precise location.

RESULTS

pH
7.2

DO
9.3 mg/L

TDS
120 ppm

CC
0.8 mg/L

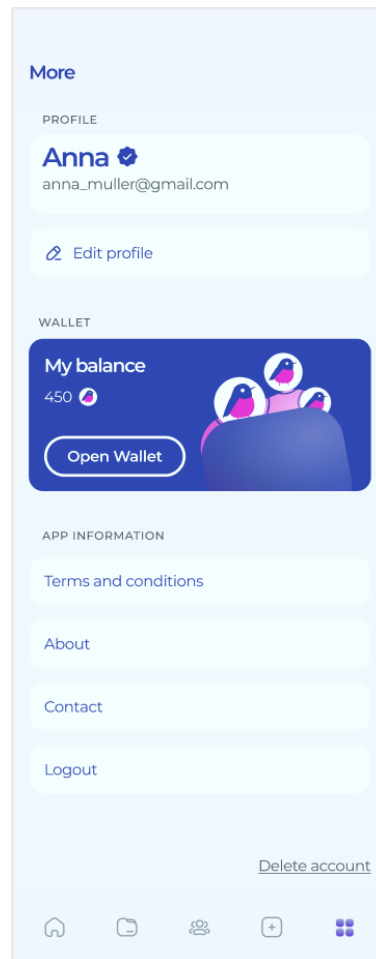
Tur
0.5 NTU

BC
No bacterial contamination

Publish report

10. **More:** The More section provides access to:

- 10.1. Profile: Manage user details and preferences.
- 10.2. Wallet: View token balance and manage transactions.
- 10.3. Others: Access webviews for terms and conditions, about, and contact information.



b) Importance of Ease of Use

The application's design and user flow prioritize ease of use and user-friendliness. We recognize that the diverse user base, including both technical and non-technical users, requires a seamless experience. Our intuitive interface and straightforward navigation ensure that users, regardless of their technical background, can access and understand water quality data effortlessly.

c) Key Features

The application boasts several key features:

- a) Secure, invitation-only login.
- b) Interactive map for data discovery.
- c) Color-coded water drop icons for data categorization.
- d) Advanced search functionality.
- e) Wallet management for token transactions.
- f) Easy access to detailed data analysis.
- g) User data upload and verification process.
- h) Integration with a community forum.
- i) User profile management and preferences.
- j) Webviews for terms and conditions, about, and contact.
- k) Transparent transfer of documents among users.

d) How to Use

Using the application is straightforward:

- i. Log in via the invitation link.
- ii. Explore water quality data on the home screen map.
- iii. Tap data points to access analysis details or use the search bar for specific information.
- iv. Manage tokens and transactions in the wallet.
- v. Upload your own data in PDF format on the Upload screen.
- vi. To earn PINK Tokens for submitting water quality data, users simply need to upload a PDF of the water quality report to the app. The app will then automatically recognize the data and add it to the database. Users will then receive PINK Tokens as a reward for the data purchased by other users.
- vii. Engage with the community forum through the Community screen.

viii. Edit user details and view your token balance in the More section.

The application's user interface is designed to be intuitive, guiding users through the process of accessing and interacting with water quality data while ensuring a seamless and user-friendly experience.

3 Backend Architecture

The Pink Elements backend architecture is built with TypeScript and the Nest NodeJS framework. It is designed to be scalable and performant, and it uses a Service-Oriented Architecture (SOA) pattern to achieve this.

Service-Oriented Architecture (SOA) Pattern

SOA is an architectural pattern that decomposes a software application into a set of loosely coupled services. Each service performs a specific task and exposes an interface to other services. This makes it easy to add new services, remove existing services, and scale services independently.

Benefits of SOA

SOA offers a number of benefits, including:

1. **Scalability:** SOA makes it easy to scale applications by adding or removing services as needed.
2. **Flexibility:** SOA applications are more flexible than traditional monolithic applications because they can be easily adapted to changing requirements.
3. **Reusability:** SOA services can be reused in multiple applications, which can save time and money.

How Pink Elements Uses SOA

The Pink Elements backend architecture is based on an SOA pattern. The following are some of the key services that make up the Pink Elements backend:

- a) **Authentication Service:** This service handles user authentication, including registration, login, and logout. It acts as a proxy for the Auth0 service, ensuring secure and seamless user access.
- b) **User Service:** This service manages user UUID, subscription, retrieval and deletion.
- c) **Map Service:** The Map Service focuses on the storage, retrieval, and manipulation of location data. It integrates the Google Maps Software Development Kit (SDK) to provide geospatial information, enhancing the user experience.
- d) **Wallet Service:** This service manages the processing of requests for Distributed Ledger Technology (DLT) transactions. It handles user public keys (PK) and maintains a history of user wallet data. This includes tokens earned for submitting data, transactions related to token purchases.
- e) **PDF Recognition Service:** This service handles the recognition of values in PDFs in English and German and other languages. We're using Azure AI Document Intelligence to recognize, parse and extract measurements values from the documents.
- f) **Data Service:** This service stores and retrieves water quality data, including sensor data, user-submitted data and document creation (adding document hash to the Smart Contract), and sales.. It should also handle documents storage in Azure Files
- g) **AI Analysis service:** We're using Azure OpenAI ChatGPT 3.5 to provide water report analysis in various formats. Users should be able to request analysis in easy-to-understand, scientific, and humorous summaries, as well as receive information on measures for improving water quality. Each analysis request will cost 1 PINK token, and the transaction fee should be sent to the designated company account.

- h) **Gateway API Service:** This service is handling routing and API gateway functionalities, providing a unified API for the mobile app, future web app and admin panel to communicate with the various back-end services.

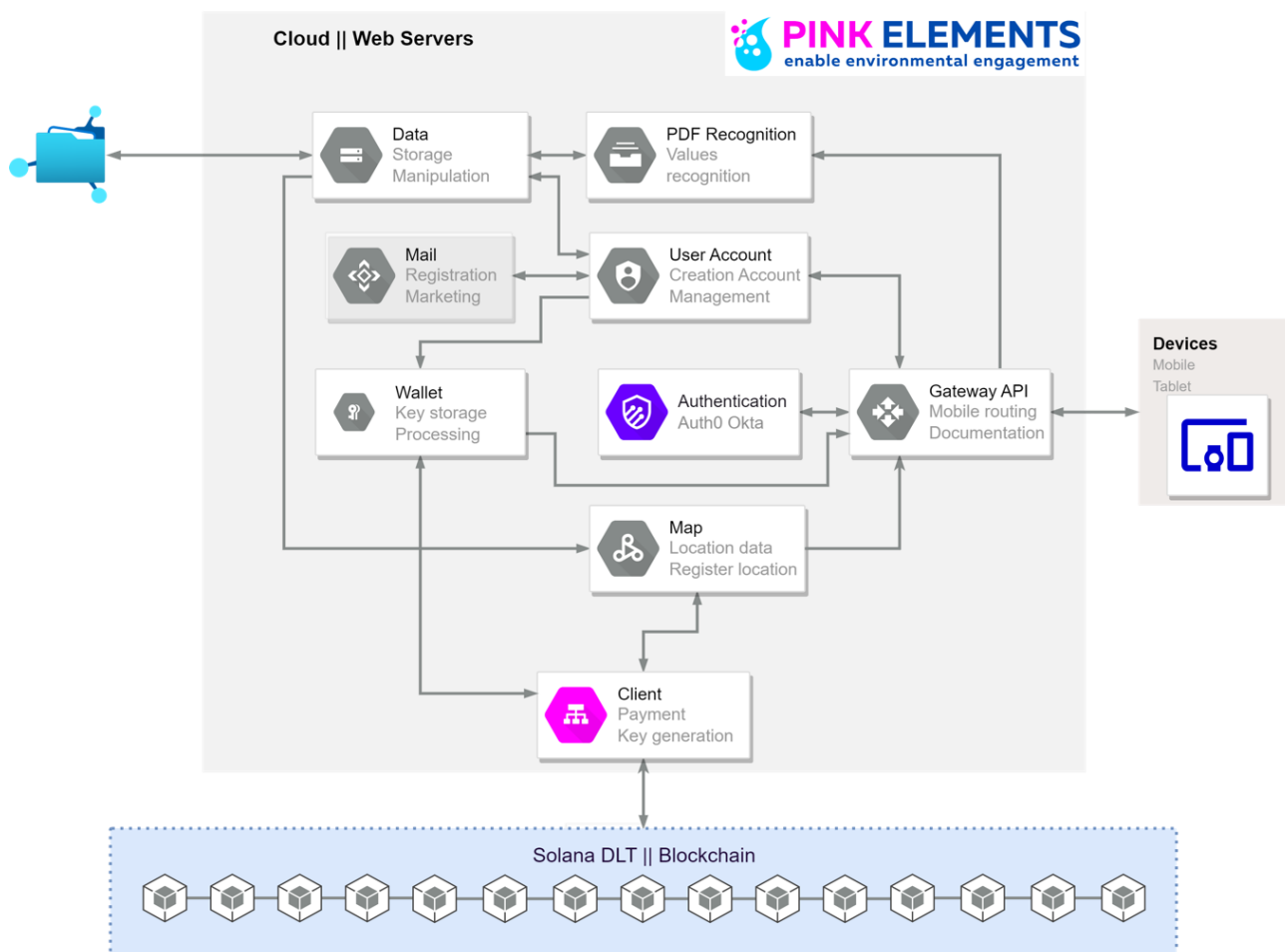
These services are loosely coupled and communicate with each other through well-defined interfaces. This makes the Pink Elements backend architecture scalable, flexible, and reusable.

Postgres and MongoDB Databases

The Pink Elements backend architecture uses two databases: Postgres and MongoDB. Postgres is used to store user data, map data, wallet balance, and other data. MongoDB is used to store recognized reports.

- i. **Postgres:** Postgres is a powerful and scalable relational database that is well-suited for storing structured data.
- ii. **MongoDB:** MongoDB is a NoSQL database that is well-suited for storing unstructured data, such as recognized reports.

Architecture: Pink-Elements 00.02.00 Back-end



The Pink Elements backend architecture also uses the following **third-party services**:

- iii. **Auth0 (Okta):** for all the User data and Authentication (in future Authorization) processing.
- iv. **Google Maps SDK:** The Google Maps SDK is used to handle location data and display maps on the Pink Elements mobile app.
- v. **Azure AI Document Intelligence:** Azure AI Document Intelligence is used to recognize and extract data from PDFs.
- vi. **Azure OpenAI ChatGPT 3.5:** Azure OpenAI ChatGPT 3.5 is used to generate water report analysis in various formats.

Scalability and Performance

The Pink Elements backend architecture is designed to be scalable and performant for a growing user base. This is achieved by using a number of techniques, including:

- vii. **Load balancing:** Load balancing is used to distribute traffic across multiple servers. This helps to improve performance and scalability.
- viii. **Caching:** Caching is used to store frequently accessed data in memory. This can improve performance by reducing the number of database queries that need to be made.
- ix. **Services:** The Pink Elements backend is composed of a number of Services. This makes it easier to scale the backend by adding or removing services as needed.

Conclusion

The Pink Elements backend architecture is a scalable and performant backend that is designed to support a growing user base. It uses a Service-Oriented Architecture (SOA) pattern, Postgres and MongoDB databases, and third-party services such as the Google Maps SDK, Azure AI Document Intelligence and Azure OpenAI ChatGPT 3.5.

4 How Pink Elements Utilizes Blockchain Technology

Micropayments: Blockchain technology, specifically the Solana blockchain, enables Pink Elements to implement micropayments seamlessly. Users can make small, cost-effective transactions using PINK tokens, allowing them to access and purchase water quality data on a granular level. This micropayment system provides a convenient and efficient way for users to pay for the data they need.

Smart Contracts for Stacking Rewards and Vesting for Investors and Team

Pink Elements uses smart contracts to implement stacking rewards and vesting for investors and team members. Stacking rewards are a way to incentivize users to hold Pink Tokens by rewarding them with additional tokens for doing so. Vesting is a way to gradually release tokens to investors and team members over a period of time. Smart contracts are used to automate the issuance of stacking rewards and vesting tokens, which makes the process more efficient and transparent.

Smart Contracts for Data (Hash) Creation and Purchase: Smart contracts are central to Pink Elements' data management system. When users upload water quality reports, the platform creates a unique hash for each document and records it on the Solana blockchain. This hash serves as an immutable reference to the original document, ensuring data integrity and preventing tampering. Users can also purchase data by engaging with these smart contracts. The transactions are executed securely, and the records are transparent, offering trust and reliability in data transactions.

Here are some of the benefits of using blockchain technology for these purposes:

1. **Transparency:** Blockchain technology is transparent, which means that all transactions are recorded and auditable. This helps to ensure that the Pink Elements platform is fair and trustworthy.
2. **Decentralized:** there is no such top authority in the system as Users are responsible for the data and its usage.
3. **Efficiency:** Blockchain technology can be used to automate many of the tasks involved in managing and using water quality data. This can help to improve the efficiency of the Pink Elements platform.

Overall, Pink Elements uses blockchain technology to create a more transparent, decentralized and efficient platform for managing and using environmental quality data.

5 Data Analysis and Utilization

Pink Elements collects water quality data from a variety of sources, including:

1. **User-submitted data:** Users can submit water quality data to the Pink Elements platform by uploading PDFs of water quality reports.
2. **Sensor data:** Pink Elements is working with partners to develop sensors that can collect water quality data in real time.
3. **Third-party data:** Pink Elements also collects water quality data from third-party sources, such as government agencies and environmental organizations.

AI-Driven Data Analysis: Pink Elements employs cutting-edge AI technologies, specifically Azure OpenAI ChatGPT 3.5, to provide users with comprehensive water report analyses. Users can request these analyses in multiple formats, including easy-to-understand, scientific, and even humorous summaries. The AI system processes the water quality data and generates insightful summaries that cater to various user preferences. For example, Pink Elements can suggest ways to reduce water pollution, or it can suggest ways to improve water conservation.

Measures for Improving Water Quality: The water report analyses produced by our AI system go beyond mere data presentation. They also offer information on measures to enhance water quality. Users receive recommendations and actionable insights on steps they can take to improve water quality in their local areas. These suggestions are grounded in scientific knowledge and tailored to the specific data and circumstances, providing a practical roadmap for users to contribute to better water quality. Pink Elements can also provide users with information on the health risks associated with poor water quality.

Community Collaboration: Pink Elements is not just a data repository; it's a community-driven platform. Users can collaborate, share knowledge, and exchange experiences regarding water quality. The data collected and analyzed on the platform serve as a foundation for community engagement. Users can discuss findings, identify areas of concern, and collectively work on projects or initiatives to address water quality issues in their localities.

Environmental Projects: Pink Elements encourages its users to initiate and participate in environmental projects aimed at improving water quality. The data available on the platform can serve as a valuable resource for such projects. Users can access historical data, identify trends, and pinpoint areas that require attention. This information is instrumental in planning and executing initiatives that have a positive impact on water quality.

Pink Elements is still under development, but it has the potential to revolutionize the way we manage and use water quality data. By collecting, analyzing, and utilizing water quality data, Pink Elements can help us to:

- a) Identify and address water quality problems more quickly and effectively.
- b) Develop new technologies and solutions for improving water quality.
- c) Make more informed decisions about how to use our water resources.

By working together, we can use Pink Elements to make environment better for everyone.

6 Conclusion

In conclusion, Pink Elements is a groundbreaking platform that harnesses the power of blockchain and artificial intelligence (AI) to revolutionize the way we access, analyze, and act upon environmental data. Our commitment

to delivering a user-centric and environmentally conscious experience is at the core of our mission.

Revolutionizing Water Quality Access: Pink Elements provides an unprecedented level of access to water quality information. Using the Solana blockchain, we enable users to access data on a granular level, promoting transparency and empowering individuals with the knowledge they need to make informed decisions regarding their water sources.

1. Pink Elements can be used to track water quality over time, which can help to identify trends and patterns. This information can be used to develop targeted interventions to improve water quality.
2. Pink Elements can be used to identify areas where water quality is poor. This information can be used to target resources and efforts to improve water quality in these areas.
3. Pink Elements can be used to monitor water quality in real time. This information can be used to warn people of potential problems and to take steps to protect their health.
4. Pink Elements can be used to educate people about water quality and the importance of clean water. This information can help people to make informed decisions about how to use water and to protect water resources.

Blockchain Trust and Security: The use of blockchain technology ensures trust and security in data transactions. Each document is hashed and recorded on the Solana blockchain, making it immutable and tamper-proof. This enhances data integrity and provides a reliable foundation for users and regulatory bodies.

In conclusion, Pink Elements is an innovative solution that ingenuity decentralizes access to water quality data, empowers users with AI-driven insights, and promotes community engagement to improve water quality.

By combining the strengths of blockchain and AI, we are not only transforming how we interact with data but also making a tangible difference in safeguarding one of our most precious resources: clean water. This project is a testament to the potential of technology to enhance our lives, protect the environment, and promote collective action for a sustainable future.

Part VII - Community Functions

Pink Elements is more than a global database for uploading and downloading environmental data for institutional users and individuals.

Part of Pink Elements' vision is to contribute to a more sustainable and mindful use of natural resources worldwide. To achieve this goal, it requires easy and efficient networking of like-minded people, sharing advice, asking and answering questions or recommend individual measures.

Therefore, one component of the Pink Elements app is a forum integrated via Single Sign On from our partner NodeBB.

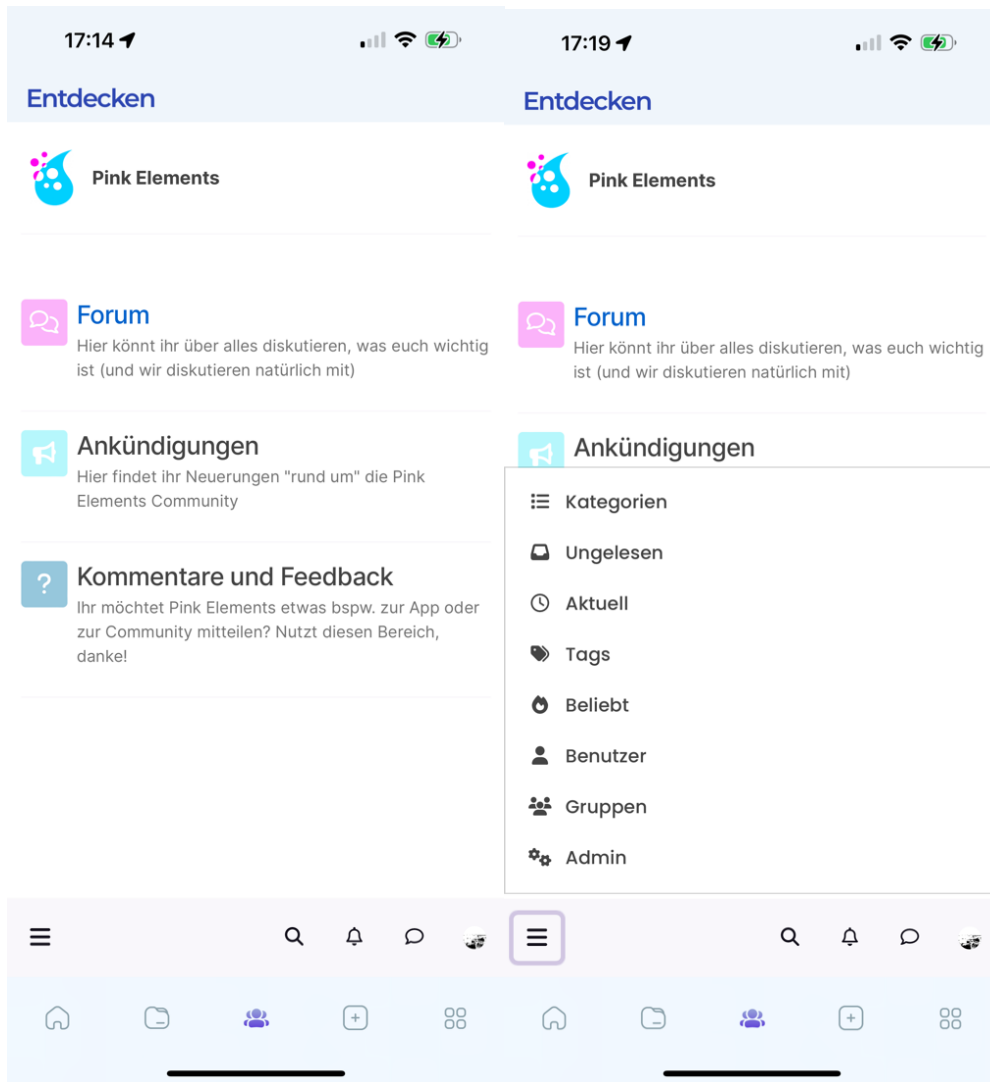
Registered users have the following options, among others:

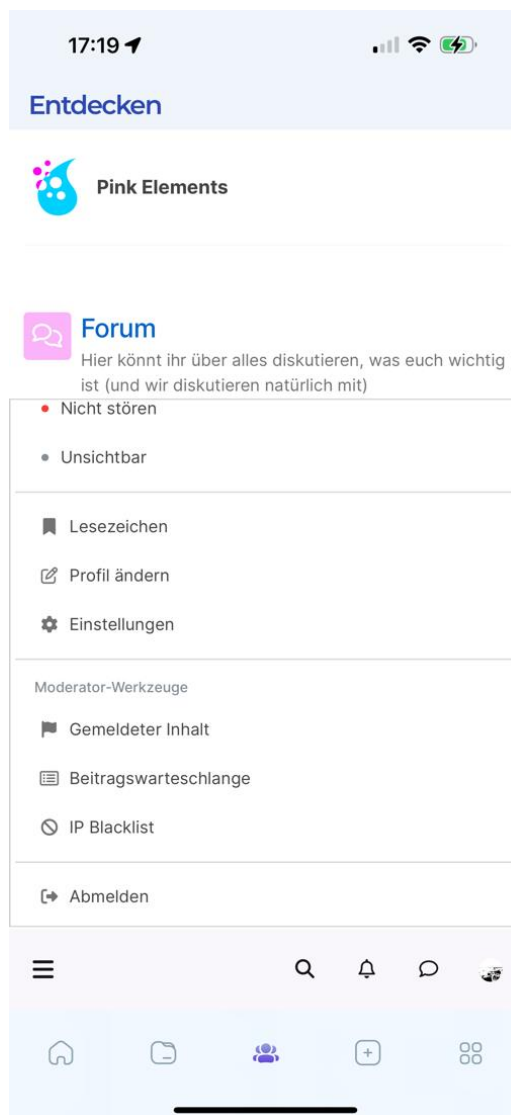
1. Networking among users
2. Exchange with each other and with environmental data experts
3. Direct exchange C2B incl. exclusive product beta testing
4. Different rights and roles (e.g. Moderator or Superuser)
5. Ratings

Each EQD offers the technical possibility to create a closed user group in the Pink Elements forum, to which only PE users who have interacted with the specific EQD have access (upload/download). Everyone can comment

on every post, including EQD. Quality issues can be discussed, questionable data can be highlighted for feedback from the community.







Part VIII - Token System

Blockchain technology forms a fundamental layer for the development of PE. On the one hand, Distributed Ledger Technology (DLT) offers significant advantages such as openness, decentralization, censorship resistance, and a trustworthiness of the stored information, since the history cannot be changed. On the other hand, the use of Pink Tokens as means of payment for transactions within the platform allows providers of environmental data to be rewarded for their efforts. In addition to the purchased information, the data-buyers gain access to a protected

communication area where they can exchange content with the information provider and other information buyers.

1 The Pink Token

The Pink Token stands apart from traditional cryptocurrencies, which are often focused on infrastructure, speculation, and trade. Instead, it serves a meaningful purpose in environmental protection by serving as a means of payment to access vital environmental data such as water and air quality, while encouraging collaboration in the environmental community.

With each micropayment to obtain environmental data, the value of the Pink Token is strengthened, and the growing community contributes to the growing demand. This makes the Pink Token a tool that appeals to millions of environmental and health enthusiasts and promotes a sustainable future.

With a focus on practical applications and sustainability, the Pink Token gives investors the opportunity to invest in environmental protection and a better future.

The Pink Token will be created as a payment system on PEP. The number of Pink Tokens will be set at a maximum of 10 billion.

The following uses are planned on the PEP:

1. The Pink Token is intended to enable micropayments on PEP, the amount of which can be determined by the data providers. These payments will be provided by the data users. Of these transactions, 50% of the value will go to the data provider and 50% will go to Pink Elements. This transaction fee may be reduced at a later date as the transaction traffic matures.
2. Payment from service-providers such as analysis labs,

3. Payment by OEMs for advertising,
4. Fundraising activities,
5. Crowd funding of environmental initiatives, or
6. Future Decentralized Finance (DeFi) applications such as insurance or Non-Fungible Token (NFT).
7. A referral scheme will be implemented – active users (data providers, data users, community members) have the opportunity to generate pink token income based on transactions performed by newly acquired users.

evtl. Price to be fixed by data owners

2 Tokenomics

From the official start of the public sale, a secondary market will determine the price of the token regardless of the platform.

10 Billion Pink Token will be distributed

TGE Price \$0,005		Total Supply 10.000.000.000						
Allocation	Token	Share	Price	Locking Time	Release Time	Initial Circulating Supply	Comments	
Seed Round	750.000.000	7,5%	\$0,002	12	12	0	not sold: moved to Reward System	
Private Sale	325.000.000	3,0%	\$0,004	6	18	0	not sold: moved to Reward System	
Pre Sale	325.000.000	3,5%	\$0,004	1	11	0	price bonus scheme	
Public Sale	300.000.000	3,0%	\$0,005	0	9	75.000.000	0/25%, 3/25%, 6/25%, 9/25%	
Liquidity	500.000.000	5,0%		0	24	0	provided by Pink Elements	
Reward System & Staking	2.000.000.000	20,0%		0	120	16.666.667		
Development	1.400.000.000	14,0%		0	60	23.333.333		
Marketing & Partnership	1.400.000.000	14,0%		0	48	29.166.667		
User Sale into Pink App	2.000.000.000	20,0%		0	60	33.333.333		
Team & Advisor	1.000.000.000	10,0%		12	12	0		
Total	10.000.000.000	100,0%				177.500.000		
Initial Circulating Supply				Initial Market Cap				
177.500.000				\$887.500				

The token will be set-up on the Solana Platform. It will be fully compliant to Know-Your-Customer (KYC) and Anti-Money Laundering (AML) regulation and guidelines. A legal counsellor has been involved to obtain a written

opinion by Liechtenstein FMA Authority, confirming the property of the Pink Token as Currency Token.

3 Token Liquidity and Token Value

The nominal value of a Pink Token is set as follows:

1. Seed Sale: 0,02 Euro
2. Private Sale / Pre Sale: 0,04 Euro (Split; dates; refer back to tokenomics)
3. Public Sale: 0,05 Euro

Token distribution starts with seed/private/public sale. In this phase 17% of the tokens are placed for investors.

PE makes 5% of the tokens available as liquidity on appropriate exchanges (Decentralized Exchange (DEX) and Centralized Exchange (CEX)).

With the launch of PEP, early adopters of the PE Mobile App will be rewarded with token airdrops (App User Airdrop) in targeted promotions to kick-start the Pink Elements Eco-System.

Demand for additional token from new and old users can be met with fiat money through connected digital exchanges, such as Coinbase directly from the mobile app. These purchase volumes are micro-orders and start at 5 Euros/USD.

With a global roll-out of the PE platform and a growing active Pink community, the demand for Pink Tokens will increase.

The value of Pink Elements decentralized environmental data platform will be represented by the value of the Pink Token over the long term.

4 Use Cases of the Pink Token

a) Overview

The Pink Token differs from traditional cryptocurrencies by dedicating its utility to environmental protection.

It serves as a versatile digital asset that:

1. enables micro-transactions,
2. facilitates OEM advertising,
3. fosters community loyalty,
4. supports crowdfunding for vital water quality measurements,
5. acts as a donation tool for environmental initiatives,
6. serves as a reward system for active platform users,
7. acts as a community valuation currency,
8. introduces environmental NFT series,
9. handles IoT data uploads,
10. and develops financial NFTs based on environmental data.

The Pink Token's unique focus on environmentally conscious use cases demonstrates its commitment to a sustainable future.

Many use cases for the Pink Token can be envisioned inside the Pink Elements Platform, of which two major ones are described in more detail below.

b) Environmental Quality Data, published by users

Private or commercial users will be able to upload and share their own environmental quality data, e.g., a water analysis, which they had made for their own private or commercial use. The latter happens often, for example

when an owner of an apartment building is testing for compliance with Legionella regulation or when a restaurant or bar is verifying their water quality to e.g., select treatment equipment for water as a food ingredient.

Good water quality in an apartment house, a bar or a restaurant can be published on Pink Element and is an argument to visit or consider living in such an establishment.

For a submitted water report that is downloaded by another user, the contributing user will receive 50% of an amount of token, which the offering party can freely determine, atop a minimum amount. 50% of the amount will be given to Pink Elements as transaction-payment for maintaining the infrastructure of the platform.

c) Consumption of Advertising

Advertising on websites and platforms has long been a major source of income generation on the world wide web. Since the focus on Pink Element's platform is the provision of high-quality and trustworthy data, it has been decided to move away from the typical advertising model, which affects the perception of the platform, to one which routes the income of each ad through to the user.

Given that a user of the platform searches for information regarding water quality for a certain location, the user can opt-in to see products from third-party advertisers, which are related to the findings of the water in that very location. For example, if the results show that the water contains an excessive amount of lead, advertisements for lead-removing products will be displayed.

When an advertisement is displayed, the user will receive tokens for having seen the advertisements. If they click on an ad and are taken to the website of the advertiser, they will receive additional tokens.

OEMs will pay users, to whom their ads have been displayed to, directly in Pink Token through micro-contracts. Pink Elements will at the same time receive a transaction fee.

Part IX – Conclusion

The knowledge provided by Pink Elements is vital to all of us: the quality of drinking water that runs from the pipes in our homes, of air in our living quarters or of the levels of noise on the streets out front door.

Pink Elements delivers those data in an intuitively usable smartphone app, just one click away. Amended by a community platform, which enables its users to reach out to each other, to seek advice, to help or to link with people sharing the same concerns.

The Pink Elements Platform also provides all the technical ingredients to grow into the world's most used platform for environmental data: automated, advancing technologies to find and extract data on the web, the possibility to upload data by users as well as through IoT-sensors, data storage anchored to the blockchain to always be most trust-worthy and last but not least a token system to incentivize users to participate.

Same as the platform is open to participate for everyone, so is Pink Elements' financing: everybody is invited to participate in Pink Elements' success by buying into the Pink Token, which is to be seen not only as a personal investment, but as an investment into a brighter future, by boosting Pink Elements, the world's leading social platform and database for environmental aspects.

List of abbreviations

AML	Anti-Money-Laundering
API	Application programming interface
CEX	Centralized Exchange
DApp	Decentralized application
DeFi	Decentralized Finance
DEX	Decentralized Exchange
DLT	Distributed Ledger Technology
DRM	Digital-Rights-Management
ETL	Extraction, Transformation and Uploading
EQD	Environmental Quality Data
IoT	Internet of Things
JSON	JavaScript Object Notation
KYC	Know-Your-Customer
NFT	Non-Fungible Token
NoSQL	Not only Sequential Query Language
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
PE	Pink Elements
PEP	Pink Elements Platform
PWQD	Public Water Quality Data
SOA	Service-Oriented Architecture
UEDA	Unique Environmental-Data-Asset
UI	User Interfaces
URL	Uniform Resource Locator
UX	User Experience
WQA	Water Quality Association
WQD	Water Quality Data

References

- [1] "A comprehensive write-up can be found here," [Online]. Available: <https://ourworldindata.org/grapher/historical-and-projected-population-by-region>.
- [2] "Original data from UN reports, but comprehensive summary here," [Online]. Available: <https://ourworldindata.org/grapher/urban-and-rural-population-2050>.
- [3] "IPCC Special Report in 2018," [Online]. Available: <https://www.ipcc.ch/sr15/chapter/spm/>.
- [4] ESA climate office, "Simulations suggest ice-free Arctic summers by 2050," 2020. [Online]. Available: <https://climate.esa.int/en/projects/sea-ice/news-and-events/news/simulations-suggest-ice-free-arctic-summers-2050/>.
- [5] OcCC / ProClim, "Klima anderung und die Schweiz 2050," 2007. [Online]. Available: <http://www.occc.ch/pdf/291.pdf>.
- [6] UN, "Water Scarcity," [Online]. Available: <https://www.unwater.org/water-facts/scarcity/>. [Accessed 2021].
- [7] Sherif et al., Kuwait Institute for Scientific Research, "Effect of climate change on sea water intrusion in coastal aquifers," [Online]. Available: <https://bit.ly/3AAmu0O>. [Accessed 2023].
- [8] Zhang et al, University of Aarhus, "Global Warming Effects on Clean Water Supply in China," [Online]. Available: <https://bit.ly/3zvDOTc>. [Accessed 2023].
- [9] Schonna et al., University of Texas at Austin, "Impact of Global Warming on Water Toxicity: Cyanotoxins," [Online]. Available: <https://bit.ly/3hVUGMK>. [Accessed 2023].
- [10] Sarah Fecht, Columbia Climate School, "How Climate Change Impacts Our Water," [Online]. Available: <https://news.climate.columbia.edu/2019/09/23/climate-change-impacts-water/>. [Accessed 2021].
- [11] OECD, "Managing water for future cities," 2014. [Online]. Available: <https://www.oecd.org/environment/resources/Policy-Perspectives-Managing-Water-For-Future-Cities.pdf>. [Accessed 2022].
- [12] American Society of Civil Engineers' New York State Council, "Report Card for New York's Infrastructure," 2015. [Online]. Available: https://www.infrastructurereportcard.org/wp-content/uploads/2017/01/NY_ReportCard_FullReport_9.29.15_FINAL.pdf. [Accessed 2022].
- [13] Water Quality Association, "National Study of Consumers' Opinions & Perceptions Regarding Water Quality," [Online]. Available: https://www.masterwater.com/wqas-national-study-of-consumers-opinions-perceptions-regarding-water-quality/consumerstudy2019_public/. [Accessed 2022].
- [14] Institut für empirische Sozial- und Kommunikationsforschung, "Qualität und Image von Trinkwasser in Deutschland," 2020. [Online]. Available:

https://www.vku.de/fileadmin/user_upload/Verbandsseite/Landingpages/twis20/twis_report2020_29092020.pdf. [Accessed 2022].

- [15] WHO, "WHO Guideline for drinking water quality", Fourth Edition," [Online]. Available: <https://apps.who.int/iris/rest/bitstreams/1080656/retrieve> .
- [16] Open AI, "Chat GPT," [Online]. Available: <https://platform.openai.com/docs/introduction>. [Accessed 2023].