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**version 1.7**

## **Mission statement:**

**to rapidly accelerate the proliferation of IoT deployments  
while leveraging advanced distributed ledger architectures to  
enable new incremental revenues**

## **Abstract:**

Tremendous opportunities to participate in cascading disruption are presented as new and exciting evolutions in distributed ledger architectures are coming to realization via the efforts of select pioneering third-generation cryptocurrency initiatives.

Adosia is an embedded Internet of Things (IoT) hardware, software and transactional data initiative. Our mission is to rapidly accelerate the adoption and proliferation of real-world energy-efficient IoT technologies while aligning Adosia embedded hardware to participate as secured nodes within advancing distributed ledger architectures. We're building a suite of fundamental hardware subassembly products and SaaS platform solutions with the goal of enabling an ecosystem for agile development, deployment, monetization and proliferation of new class of innovative connected IoT devices. We envision Adosia technology playing a significant role within the decentralized IoT ecosystem by facilitating rapid creation of new and innovative business opportunities for OEMs, system integrators, entrepreneurs, and industrial and consumer installers across a variety of market segments.

Adosia is working to manufacture physical technologies to immediately address a variety of real-world applications within select target IoT markets. By making utilities available to the market today, we are able to establish immediate value proposition resulting in new revenue opportunities for Adosia as well as third-party ecosystem partners and entrepreneurs. Adosia is strategically aligning our product roadmap to deliver high-performance low-lower IoT embedded computing platforms in a manner that leverages and supports the next generation of distributed ledger architectures.

Adosia began as an ad-tech initiative (founded in 2012), offering the value proposition of increasing and creating new viewable ad inventory on publisher websites. Adosia first realized revenue from our ad delivery platform in 2014, and has served over a billion ad requests for Adosia publishers to date. Adosia entered the IoT space in Q2-2017 with our first generation spin for BluPonix (subassembly for self-watering pot), yielding functional prototypes which have been operating since July 2017. Adosia's initial WiFi IoT subassembly hardware is in production (paid product has shipped), with subsequent roadmap products currently in various stages of development.

Our existing technical infrastructure enables an accelerated execution of our vision. Adosia maintains a highly scalable custom MVC backend web architecture which enables rapid development and seamless scalability for agile feature set expansion. To date we have leveraged the latter expertise to architect and implement a backend administrative platform to easily manage and scale supported IoT hardware configurations. This architecture enables an ability to rapidly add new WiFi hardware configurations to our system, including the ability to define discrete IO pin assignments as correlated to specific supported subsets of hardware components. This enables automated generation of device profiles to be dynamically inherited by individual Adosia IoT network devices based on countless factors limited only by imagination.

## Internet-of-Things and the Adosia Token (ADO)

Adosia's approach to enabling cascading disruption in IoT leverages one core concept: **each IoT device IO pin will entail remotely configurable functionality to enable near-endless application configuration profiles limited only by user imagination**

Each hardware component or sensor associated with an Adosia IoT hardware device can be setup to trigger external alerts or notifications, or to switch arbitrary digital IO to activate other local or external device components. Adosia IoT device profiles can be easily updated, and will soon support time-specific activation of device profiles. This approach to hardware control and customization enables Adosia IoT platform users the ability to create custom and personalized use cases for a better quality of life. This is a tremendous advancement and offers a number of new benefits.

The greatest benefit in approaching IoT management at a pin-component granularity is the wide array of diverse and application-specific implementations that can be instantly derived and implemented using a single common base hardware configuration. With this model target IoT applications will increase exponentially with each new IoT hardware configuration Adosia releases.

While the current Adosia IoT remote management platform is a centralized application deployment, it is our goal to either leverage, or partner with, a highly sophisticated distributed ledger architecture initiative to create additional incremental revenue opportunities by:

- securing Adosia IoT device profiles to enable further differentiated SaaS offerings
- enabling personal IoT data ownership and differentiated IoT data marketplaces
- aligning IoT hardware requirements to enable participation as secured nodes within the next-generation of advancing distributed ledger architectures

The Adosia (ADO) token will be deployed for use within an advanced sidechain-enabled distributed ledger architecture. ADO will be the base currency utilized to facilitate transactions within the following Adosia revenue models:

- inbound payments for Adosia IoT hardware
- wireless solar battery adapter to power/enhance Adosia sensors
- solar battery adapter for low power WiFi computing baseboard
- outbound payments on cryptocurrency revenues from Adosia IoT device mining

## **Hardware Productization - IoT Building Blocks**

Adosia is committed to maintaining sophisticated engineering capabilities to instill an ongoing culture rooted in rapid innovation. This approach will ensure Adosia's ongoing ability to navigate, induce, and participate in cascading disruption while deploying a variety of high potential IoT initiatives. All Adosia IoT hardware will support remote upgradeability to ensure rapid deployment development and to permit an ongoing expansion of feature sets.

### **Hobby Kits**

The first generation of Adosia IoT products are being released in form of various hobby kit subassemblies. This approach enables immediate paths to revenue, while allotting appropriate fielding for Adosia to gather application-specific requirements for the next generation of Adosia IoT products. This approach also enables an low-risk production environment where the Adosia IoT management platform can be refined. Adosia hobby kits will consist of both open hardware components and custom electronics manufactured by Adosia, and will be pin-compatible with popular open source hardware computing modules such as Arduino for optimal early adoption.

### **Embedded Computing Modules**

The next generation of Adosia IoT products will entail development of select low-power high-performance embedded IoT computing hardware modules to serve as a core set of microprocessing subassemblies. These computing modules are designed specifically to enable a wide variety of next-generation wirelessly connected products, with feature sets ranging from WiFi and Bluetooth connectivity, customizable digital IO, encrypted flash, touch sense, variable expansion, IR, and support for multi-channel analog inputs. Adosia intends to align this segment of our roadmap for optimal synergy and participation within advanced distributed ledger ecosystems.

### **Application-Specific Consumer and Industrial Products**

While the Adosia IoT ecosystem will enable entrepreneurs to rapidly deploy solutions addressing specific real-world problems that viable businesses can be built upon, Adosia will continually work to identify and pursue non-cannibalistic product opportunities within our IoT ecosystem targeting industrial and consumer applications. with each product line then transitioning into vertical-specific subassemblies usable by third-party entrepreneurs and system integrators interested in creating their own unique product offerings. Adosia plans to produce consumer and industrial implementations of select hobby kit product lines.



## Adosia IoT Hardware Roadmap

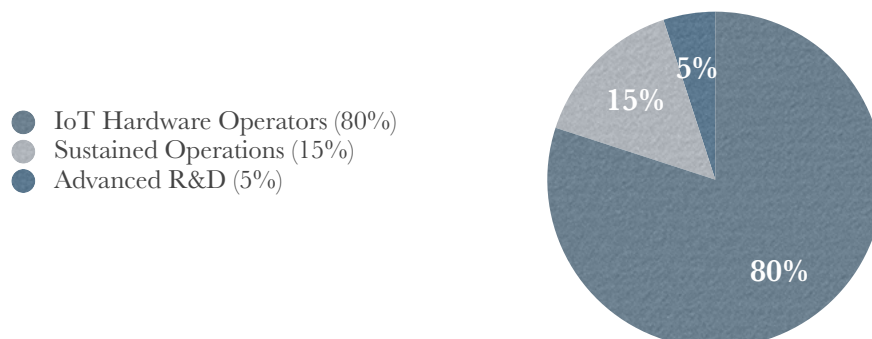
- ultra low-power, IO-expandable WiFi embedded computing baseboard (ESP8266)
- wireless solar battery adapter to power/enhance Adosia sensors
- solar battery adapter for low power WiFi computing baseboard
- dual-core, heavy IO-expandable WiFi/Bluetooth CPU baseboard (ESP32)
- application specific IO boards to complement embedded computing module
- analog and digital sensors to enable new applications for existing hardware

## Mining with Adosia IoT Hardware

Adosia IoT hardware users will have the option to earn incremental revenue by using select Adosia IoT hardware devices to mine or support transactional activities relevant to cryptocurrency. Adosia hardware operators can be individual users controlling a handful of devices, or third-party system integrators or manufacturers controlling hundreds or thousands of devices. Adosia plans to align our embedded computing board roadmap so as to best capitalize on participation within advanced emerging distributed ledger architectures. Adosia is aligning dual-core embedded silicon for these applications, where one of the processing cores will be entirely dedicated to supporting appropriate distributed ledger transaction activities.

Adosia expects growth in the rate and scale of malicious attacks on IoT WiFi devices. These attacks entail a primary goal of establishing a decentralized network of compromised hardware devices to mine on behalf of the malicious party leaving unsuspecting IoT hardware operators to absorb the power costs. A peripheral benefit to enabling mining on Adosia IoT devices is that a general consensus for the specific mining revenue range a given device family would be expected to generate will be established. This approach provides an extended mechanism to assess whether any particular hardware device has become compromised (hacked). Adosia is not claiming this observational approach as substitute for implementing sound security protocols, but simply suggesting it becomes a powerful approach when also combined with security the platform via a distributed ledger.

### IoT Mining Revenue Distribution:





Adosia will lead our early IoT initiatives with the release of our first products from our BluPonix initiative. BluPonix is the first open hardware WiFi platform for hydroponic, gardening and general plant cultivation. BluPonix makes growing plants a fun and fully internet-customizable experience. The cryptocurrency, agriculture tech, and legal cultivation markets are accelerating, and BluPonix creates a unique value proposition by unlocking entirely new monetization opportunities.

Configuration possibilities are limited only by the end-user's imagination. For example, in the case of BluPonix, devices connected to the Adosia platform can easily be configured to send a text or email when a water reservoir is low or following a sequence of digital inputs that have detected motion. Another example could be switching on external fans or lights when the temperature reaches a certain threshold, or for some predefined cycle or time period during any given day. As Adosia releases additional products, this approach will forever enhance the way we are able to interact with our homes and will provide a better overall quality of life.

BluPonix has been selected as our lead product initiative in light of current market conditions. BluPonix product has also been successfully prototyped and is ramping for production. The Adosia roadmap quickly follows up a variety of unique and significantly marketable IO boards, all of which will be interoperable and web configurable by the end-user in a manner entirely unavailable today. Adosia have shipped our first BluPonix Space Hydro hobby kits.







### Self-Watering Pot Hobby Kit Includes:

- Submersible Water Pump
- 120vac/12vdc 1A Power Supply
- BluPonix SPACE IO + Arduino Uno
- Water Level Sensor Switch
- x3 Plastic Irrigation Support Stakes
- Rugged Soil Moisture Sensor
- Tee Connector & Hydro Tubing

**Self-Watering Pots Made Easy**  
**x5 Programmable Modes**

additional compatible accessories sold separately - visit adosia.io  
\*control board of this subassembly is Arduino compatible with Uno R3 form factor



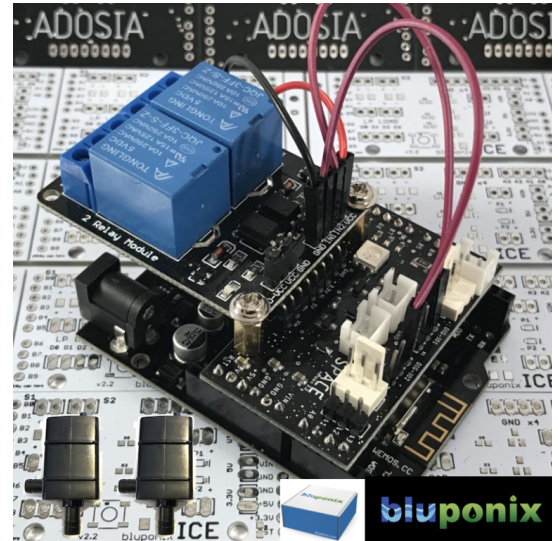
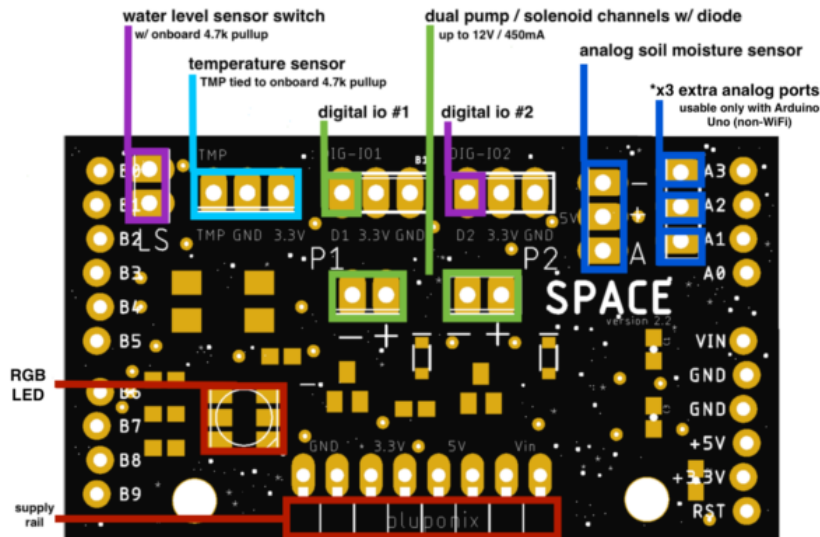
### Hydroponic Garden Hobby Kit Includes:

- x2 Submersible Water Pumps  
\*mix / substitute air pumps or solenoid water valves
- 120vac/12vdc 1A Power Supply
- BluPonix SPACE IO + Arduino Uno
- Water Level Sensor Switch
- Dual Relay Module with Mounts
- x4 Adjustable Misting Spray Heads
- Tee Connector & Hydro Tubing

**Grow anything, anywhere**  
**x4 Programmable Modes**

additional compatible accessories sold separately - visit adosia.io  
\*control board of this subassembly is Arduino compatible with Uno R3 form factor

## BluPonix SPACE v.2.2 IO Board



## BluPonix SPACE 2.2 Pinout

Function	SPACE 2.2	Arduino-UNO	ESP-8266
pump 1	B0	2	16
pump 2	B1	3	5
digital io 1	B2	4	4
LED blue	B3	5	0
LED green	B4	6	2
digital io 2	B5	7	14
level switch	B6	8	12
temp sensor	B7	9	13
LED red	B8	10	15
Analog 1	A0	A0	A0
Analog 2	A1	A1	NC
Analog 3	A2	A2	NC
Analog 4	A3	A3	NC

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## BluPonix SPACE v.2.2 IO Board Features

- dual diode-protected transistor switch channels to interchangeably drive water pumps, air pumps or solenoid water valves (5W / 400mA)
- Interchangeable water level sensor switch and temperature sensor (4.7k pullup)
- x1 analog port for Soil Moisture Sensor
- x2 digital IO pins for external relay and / or motion sensor control
- 90° header pin breakout voltage supply rail: x2 GND, x2 3.3V, x2 5V, x2 Vin (12V)
- dual relay expansion mounts (lights, larger pumps, fans, etc; 15A)
- WiFi-ready for Adosia IoT, onboard RGB LED



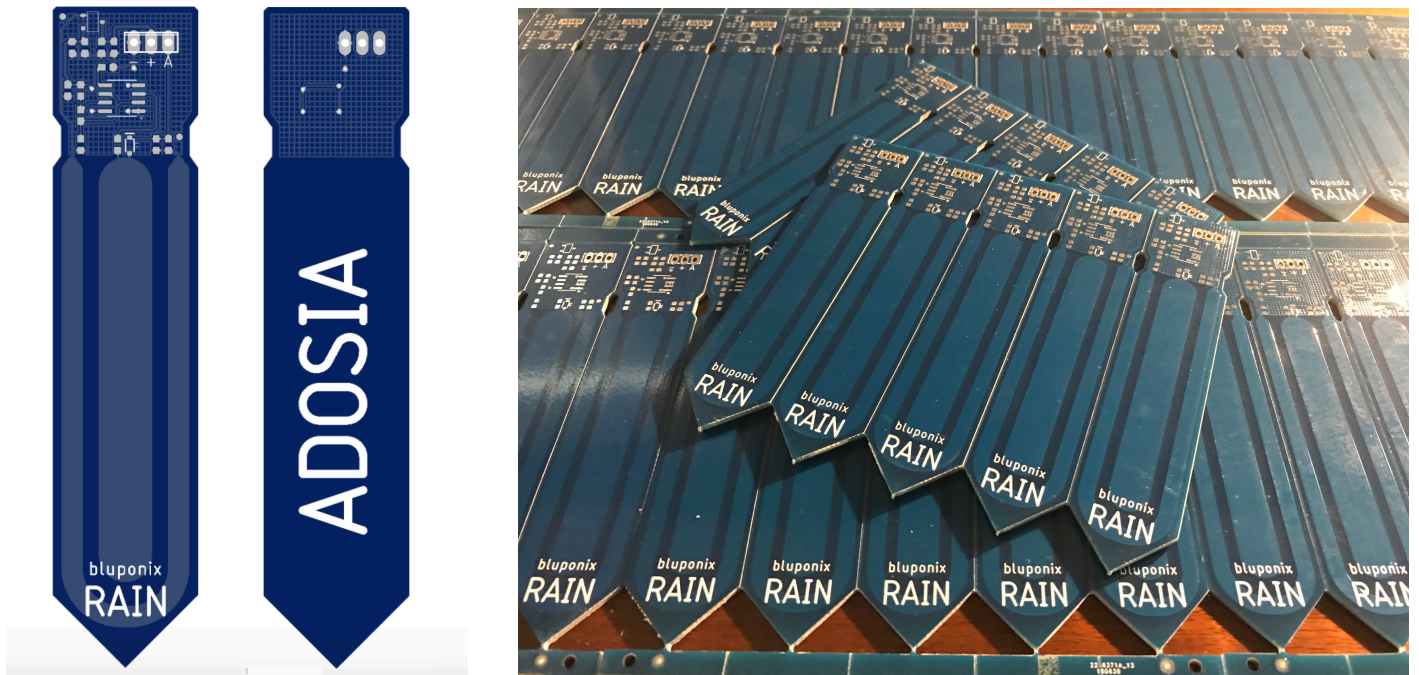
This functional hydroponic snake uses Adosia's BluPonix SPACE v2.2 hobby kit in hydroponic cycle mode. The dual pump channels are used to transport water from the reservoir to the top of the snake. Digital IO #1 is wired to an external solenoid water valve to refill the main reservoir when water level sensor switch #1 is triggered. Digital IO #2 is wired to a separate external solenoid water valve to refill the dogs' water bowl when needed.



This Adosia SPACE-powered self-watering pot prototype determines when to begin the watering cycle based on the soil (or medium) moisture level. The self-watering pot example uses a BluPonix SPACE subassembly with a single submersible water pump, water level sensor switch and analog soil moisture sensor.



## BluPonix RAIN Analog Soil Moisture Sensor



Adosia's RAIN Analog Soil Moisture Sensor for our BluPonix line is based on a modified open design hardware design (thanks DFRobot). Design, schematic, layout, prototype spin and delivery all within 2 weeks from start to finish.

### **BluPonix RAIN:**

- 1st prototypes in July 2018
- eliminates most expensive BOM vendor (>75% cost reduction)
- enhanced for industrial applications
- rapid prototype - demonstrates Adosia agility

## Additional Hobby Kit IO Board Initiatives



TapLock is a touch-based password lock platform that will forever change the way we use locks in our homes and businesses. Instead of using keys, biometrics or temporary access codes, TapLock will utilize multiple capacitive sensors that must be stimulated in the correct pre-defined pattern (password) in order to trigger unlocking of a TapLock-enabled device. TapLock touch sensors can be detected through wood and configured remotely via the Adosia platform. One use case for Adosia's TapLock would entail furniture having a hidden locked compartment to discretely store valuables or potentially even firearms. In event a TapLock device is opened, TapLock can be seamlessly configured with the Adosia platform to send alert notifications or to trigger or perform some other action to be taken by a separate external Adosia IoT hardware device. TapLock was initially prototyped the form of a locking gun cabinet.



MailMail is a solar-powered WiFi module that hangs out in your mailbox and keeps record of when your mail comes by using simple motion-detect. MailMan can be checked on-demand or programmed to send alerts or to trigger any other Adosia IoT hardware device into action. The prelude to MailMan requires the development of an open hardware solar-chargeable battery pack power module which will also be used to power a variety of Adosia IoT products. MailMain is in schematic phase, and its solar charging module is likely spin to off into its own product family.



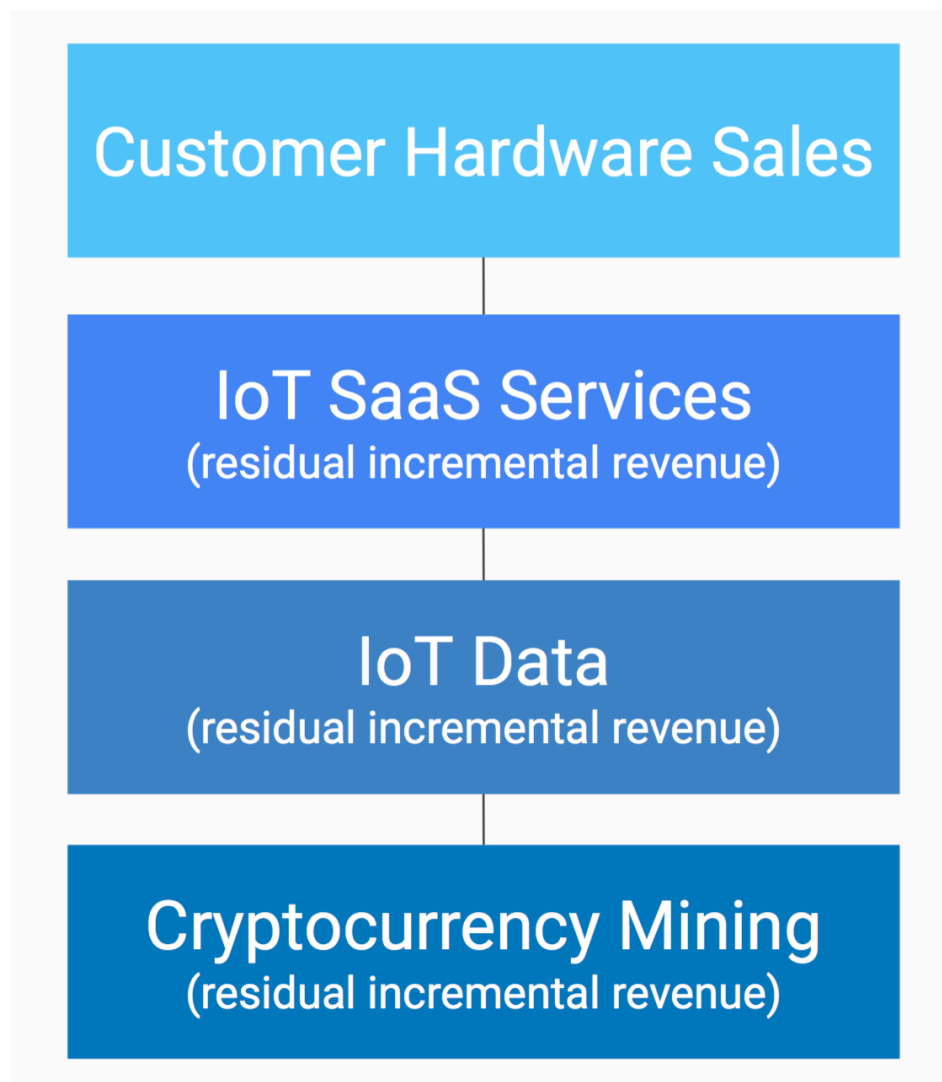
GarageBug is a hybrid WiFi sentry that enables remote garage door status viewing (open/close) and remote control from any internet connected device. GarageBug also includes motion detect triggering and support for a variety of custom IO configurations. One practical implementation of GarageBug would be to remotely check garage door status (to determine if the door is open or closed), while for added security having a custom motion-detect alert setup to be sent only between certain hours and only when the garage door is closed.

## Adosia Revenue Model

Adosia will generate a variety of incremental revenue streams methodically, starting with immediate monetization of available Adosia embedded hardware. Aligning Adosia IoT hardware for compatibility with, and participation within, nodes of advanced distributed ledger architectures enables tremendous opportunities to pursue incremental revenues.

Adosia IoT SaaS services enable residual monetization for continued use of connected Adosia IoT hardware

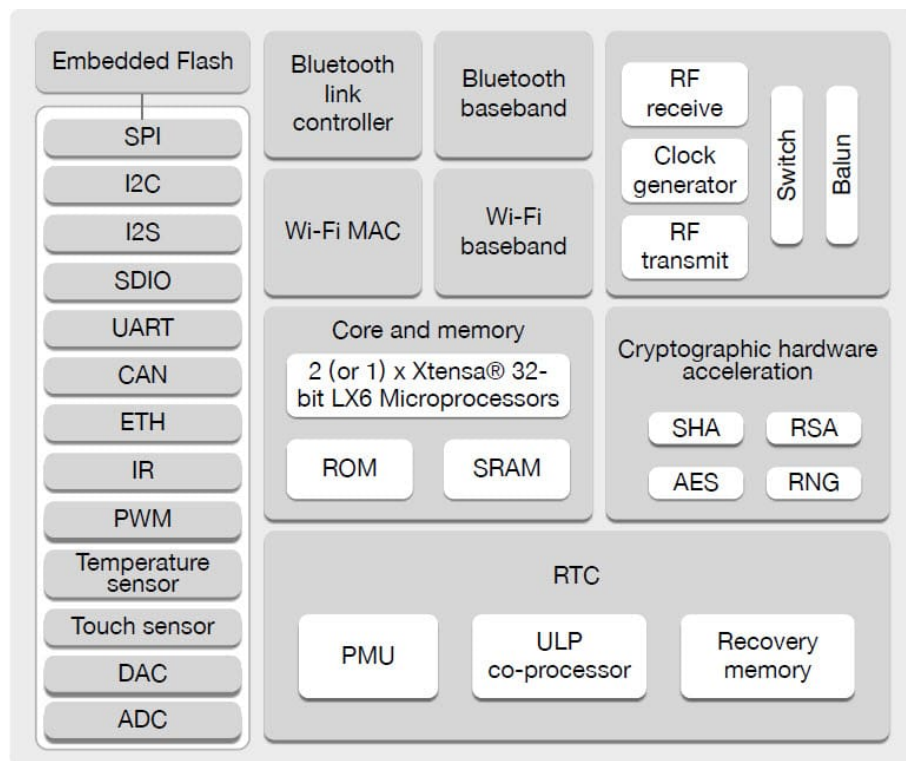
Adosia IoT Data marketplaces will enable peer-to-peer residual monetization of IoT field data collected by Adosia IoT hardware.



## Appendix A: ESP32 Dual-Core Embedded Computing Board

### ESP32 Dual-Core SoC with Wi-Fi & Dual-mode Bluetooth Features

- Two independently-controlled CPU cores with adjustable clock frequency (80 MHz to 240 MHz)
- +19.5 dBm output at the antenna ensures a good physical range
- Classic Bluetooth for legacy connections, also supporting L2CAP, SDP, GAP, SMP, AVDTP, AVCTP, A2DP (SNK) and AVRCP (CT)
- Support for Bluetooth Low Energy (BLE) profiles including L2CAP, GAP, GATT, SMP, and GATT-based profiles like BluFi, SPP-like, etc
- Bluetooth Low Energy (BLE) connects to smart phones, broadcasting low-energy beacons for easy detection
- Sleep current is less than 5  $\mu$ A, making it suitable for battery-powered IoT applications
- Integrates 4 MB flash with encryption
- Peripherals include capacitive touch sensors, Hall sensor, low-noise sense amplifiers, SD card interface, Ethernet, high-speed SPI, UART, I2S and I2C
- Fully certified with integrated antenna and software stacks





## Appendix B: Education is Ripe

This appendix outlines a synopsis of Adosia's Advanced R&D "*Curriculums*" initiative. A brief summary has been included to convey an understanding of the disruptive potential entailed within Adosia's Advanced R&D initiatives. Further details relevant to Adosia's Advanced R&D initiatives will be released with future progress updates.

It is Adosia's view that secondary and higher education are prime for disruption. Currently the quantity of valuable high-quality educational content readily available to the general public is near obscene. An individual's relevant and immediate access to such content is limited only by:

1. the individual's accessibility to a free and open internet,
2. the individual's ability to effectively identify and consume desired content in a manner that achieves their learning goals (effective "search skills"), and,
3. that individual's own internal ambition(s) and drive to better oneself via self-sanctioned continued learning

Adosia is arguing higher education is already freely available to any internet-connected individual willing to invest the time, energy and dedication it takes to self-educate oneself to achieve higher learning. As corporations have already proven they are willing to pay for such online content consumption in the form of digital ad revenue.

Adosia proposes a curriculum initiative based on a simple idea that we can leverage a hybrid platform consisting of a centralized web-based ecosystem capable of facilitating varying degrees of self-education, while simultaneously incorporating a decentralized and queryable ledger to record and measure the extent of an anonymous individual's self-learning ability, eagerness and continued progress.

Adosia believes distributed ledger technology can be leveraged to effectively measure an individual's learning ambitions, abilities and discrete progresses - and over a short time, that data footprint will aggregate to an effective measurement of human potential. This information could be subsequently queried in a manner far more useful to prospective employers seeking to identify strong candidates for employment and much more effectively than resumes and potentially even interviews. Enabling applicants to anonymously submit learning records will also assist with mitigating potential systemic racial biases that could otherwise exist within an HR chain.

## **How a Distributed Ledger Curriculum Platform Might Work**

The ability to effectively search for content is an acquired skill often taking years of practice to master, and requires an adaptive attentiveness as search algorithms change and can be inconsistent across varying content platforms. By organizing content in detail according to various subjects, knowledgeable curriculum creators will use the online platform to outline effective learning vehicles for utilization by individuals whom have yet to mature their own personal online content searching skills.

Curriculum creators are effectively the world's next generation of (incentivized) teachers. They are synonymous with content organizers, and will serve as subject guides and knowledge retention evaluators. Curriculum teachers will create and maintain curriculums of various subjects of which they possess intimate knowledge. These curriculums will consist of any freely accessible information available on the web, including video and text content both internal and external to the platform. Teachers will be rewarded with a share total revenue (generated from online ads, from mining using a students' client hardware, and as a bounty transaction split for certain content conditions). The revenue a curriculum creator can generate is proportional to the level of overall student engagement and exposure their particular curriculum(s) achieve(s). Students may rate each curriculum and/or applicable curriculum subcomponent which provides the more competent/effective teachers greater organic exposure and thus naturally earning more revenue. Content creators will also be rewarded a portion of overall revenue generated based on the usage and reach their content achieves.

Students will have the ability to control the specific datasets a prospective employer will be able to associate with their identity when applying for job employment. To achieve this, students will be able to create various sub-identities within the curriculums platform, with the ability to further partition each of those identities into customized subject groups where knowledge has been accumulated for submission to potential employers as addenda to a resume. To generate additional revenue, the platform could enable various data search services to assist employers with obtaining useful information from student data.

We'd like to begin engaging and building a community having common interest in significantly disrupting education and in exploring resolutions for additional global socioeconomic issues. Please see the Adosia website Community Page (<https://adosia.com/community.php>) for more information on how to participate in the Adosia community.