logiicdev (SME).

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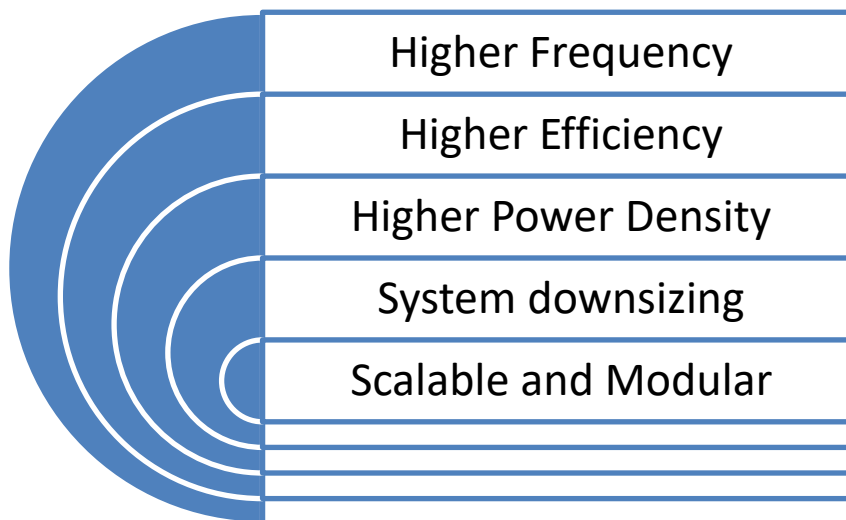
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Graz, 28.January 2025

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Omnipower,

Special motherboard designed for sensor application

Number of components: 1400
Efficiency : 91%

- Higher Frequency
- Higher Efficiency
- Higher Power Density
- System downsizing
- Scalable and Modular

(4 different sensor pluggable solutions for IOT management are available)

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(71) Applicant: LOGICDEV E.U. [AT/AT]; Krottendorfer Straße 72, 8052 Graz (AT).

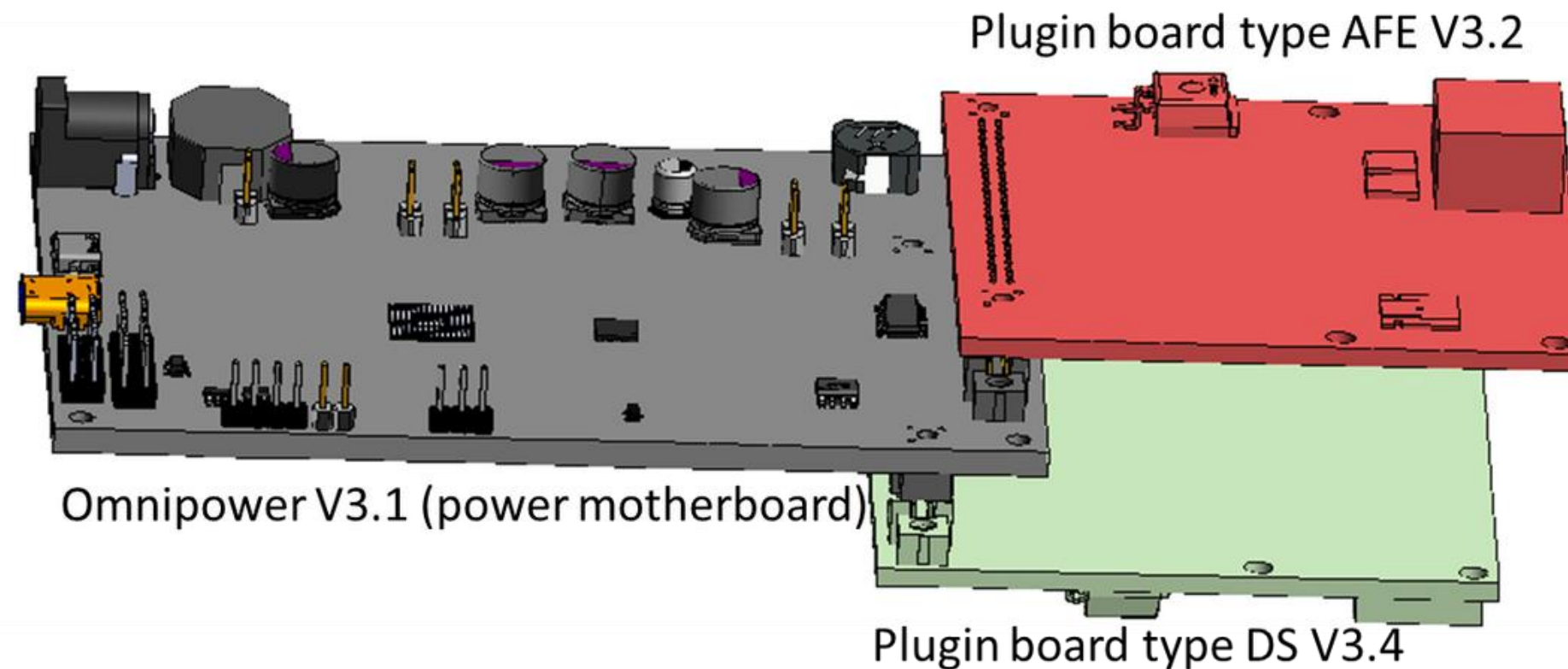(72) Inventor: V KATKORIA, Deepak; Krottendorfer Str. 72/1, 8052 Graz (AT).

(74) Agent: SCHWARZ & PARTNER PATENTANWÄLTE GMBH et al.; Wipplingerstrasse 30, 1010 Wien (AT).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

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Example SMART GRID

Plugin board type AFE V3.2

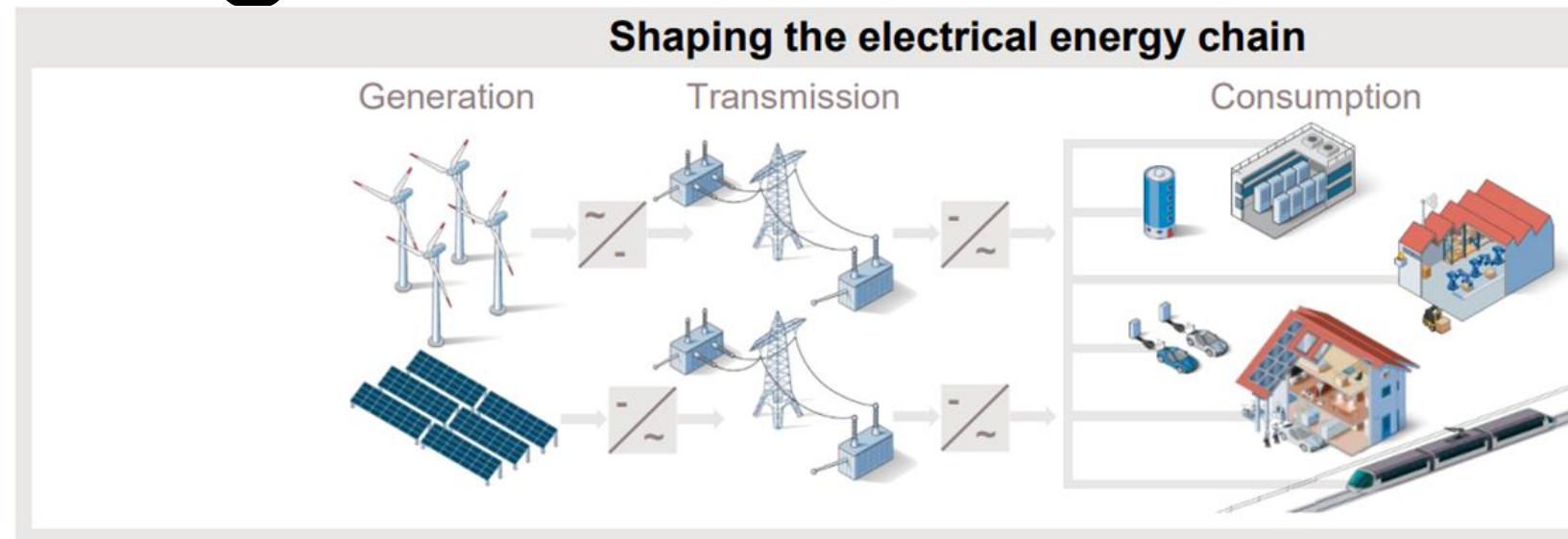Omnipower V3.1 (power motherboard)

Plugin board type DS V3.4

LORA-based Grid line real-time monitoring for reliability, data analytics (digital twin) of power transmission line, enhancing grid reliability, early fault detection, and real-time operational control.
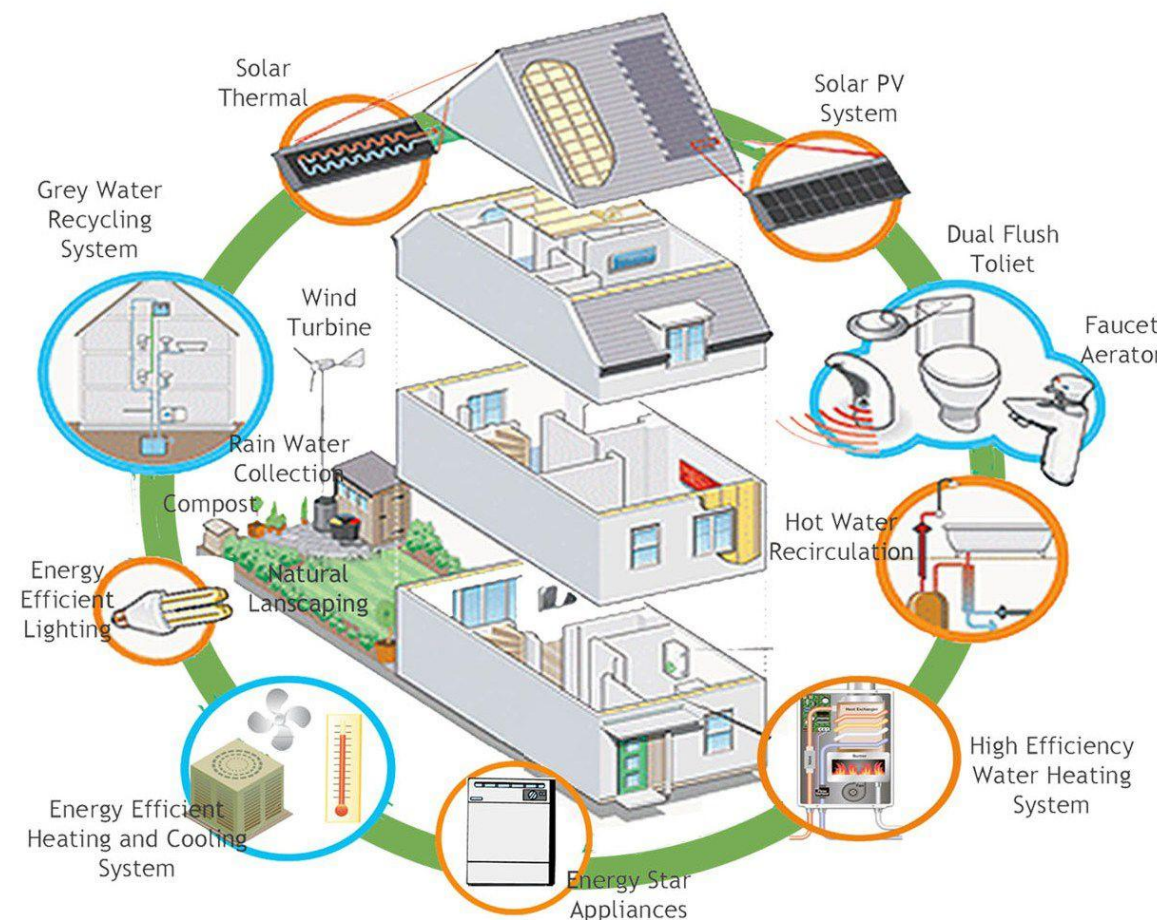
- Prediction and balance maintenance of Intermittency and Variability
- Grid stability vs Load
- Easy scaling up and down
- upfront installation costs. LCOE
- Advanced control systems
- Easy Integration of Distributed Energy Resources.
- Addressing technical issues related to voltage regulation, frequency control, and grid protection.

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ENERGY Digital twin

Shaping the electrical energy chain

Generation   Transmission   Consumption

1) Source: BP 2018 Energy Outlook

A hardware-based

Digital Twin is a

virtual representation of a physical object or system. HIL testing is a type of simulation-based testing that combines physical hardware with virtual components in a controlled environment.
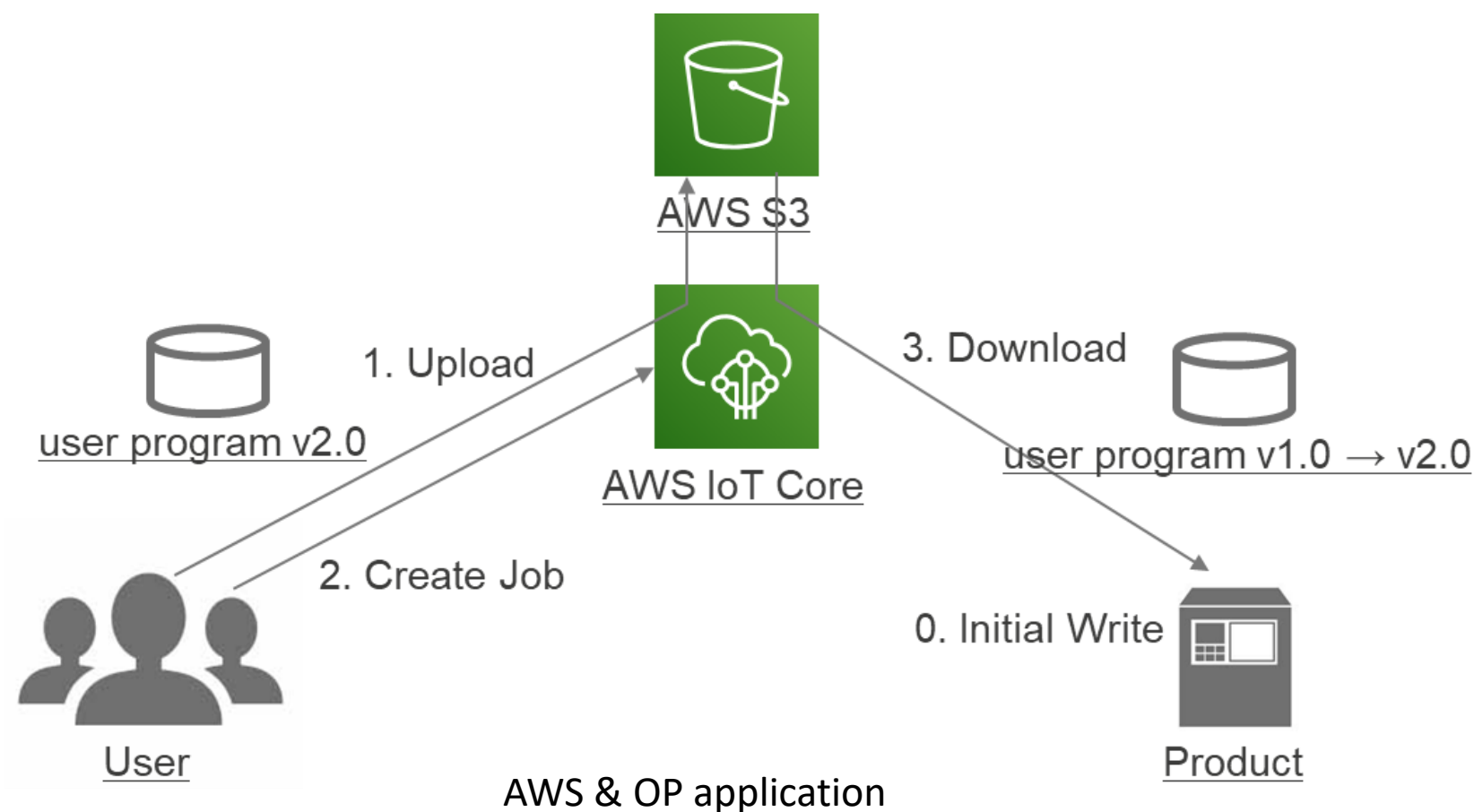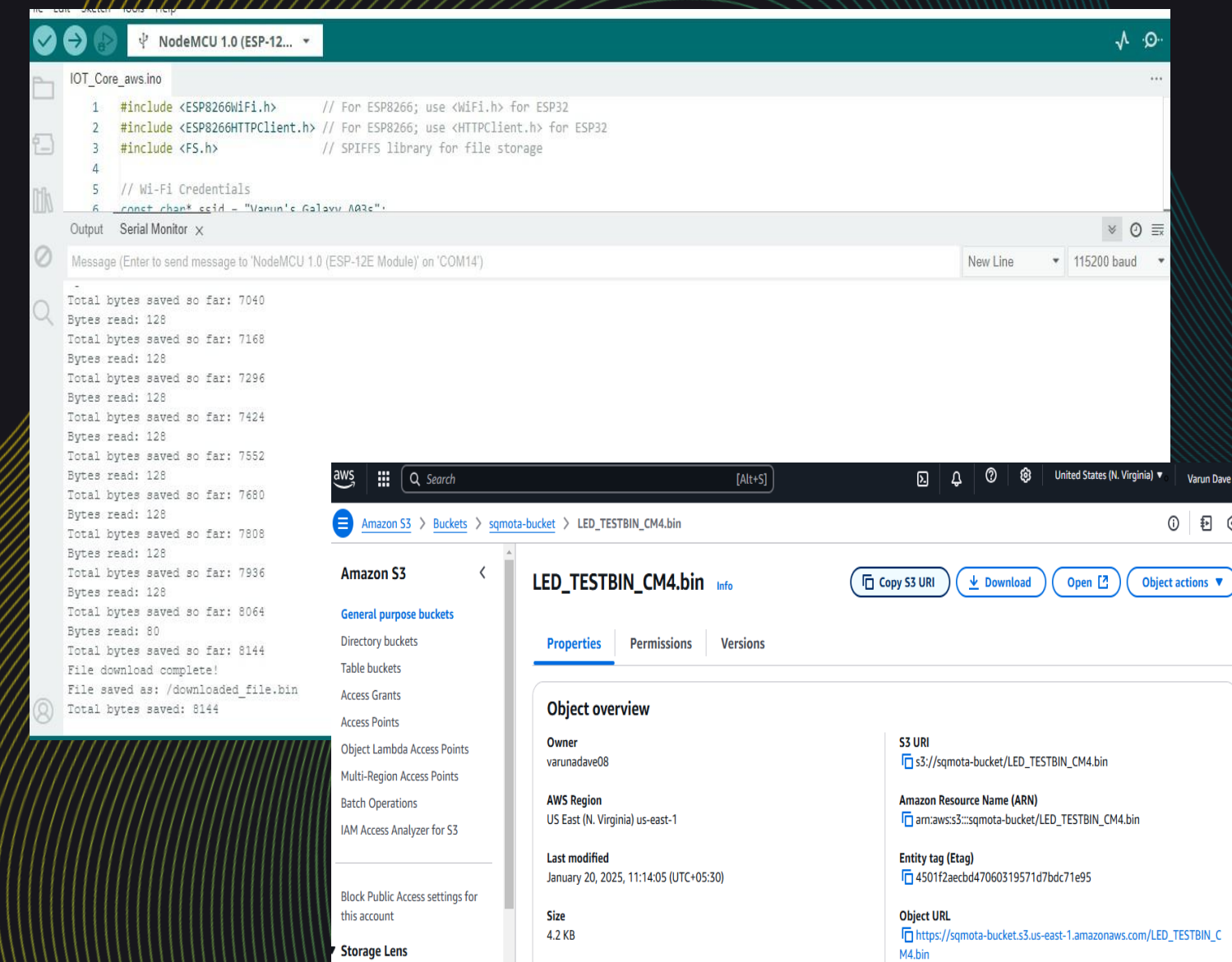

Monitoring/modelling using AI

- Real-time Digital twin (DT)
- Capture, plan, calculate and balance the Energy flow from generation, transmission to Consumption.
- LoRa and 5G
- Improving AI-based integration & test coverage
- Field-programmable gate Array (FPGA) -based Hardware in Loop (HIL)
- 5G, LTE, Wi-Fi, BLE or LoRa connectivity.

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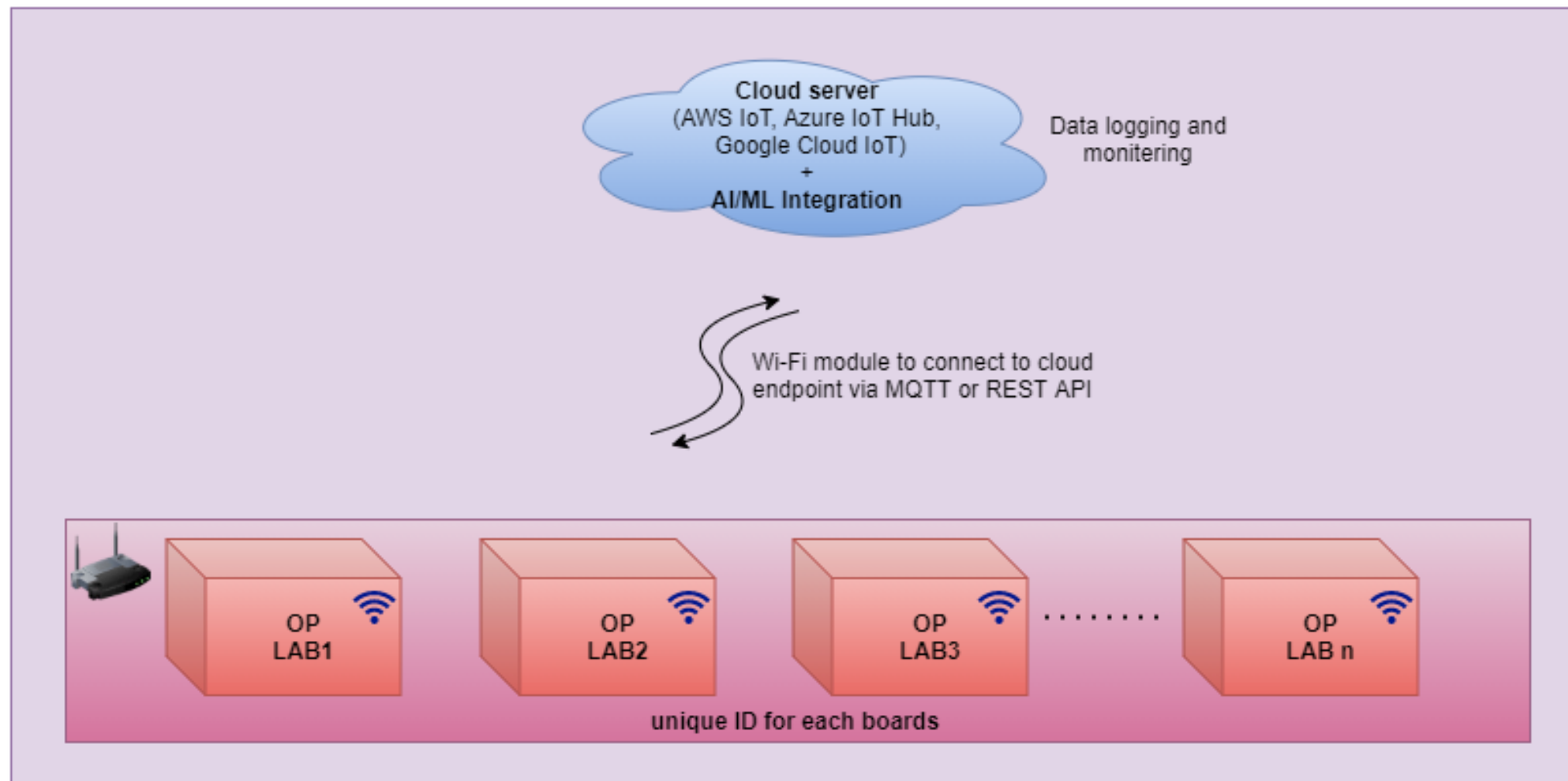# Remote OTA (over the air)

AWS & OP application

1. Allows the device's firmware to be updated without requiring external programming tools.
2. Provides a way to recover from faulty firmware by allowing reprogramming or fallback to a default firmware.
3. Ensures that only verified or authenticated firmware is executed, improving system security.
4. Remote debugging is possible based on matching requirements.
5. **To Avoid limitation of preassigned URL Use public URL**
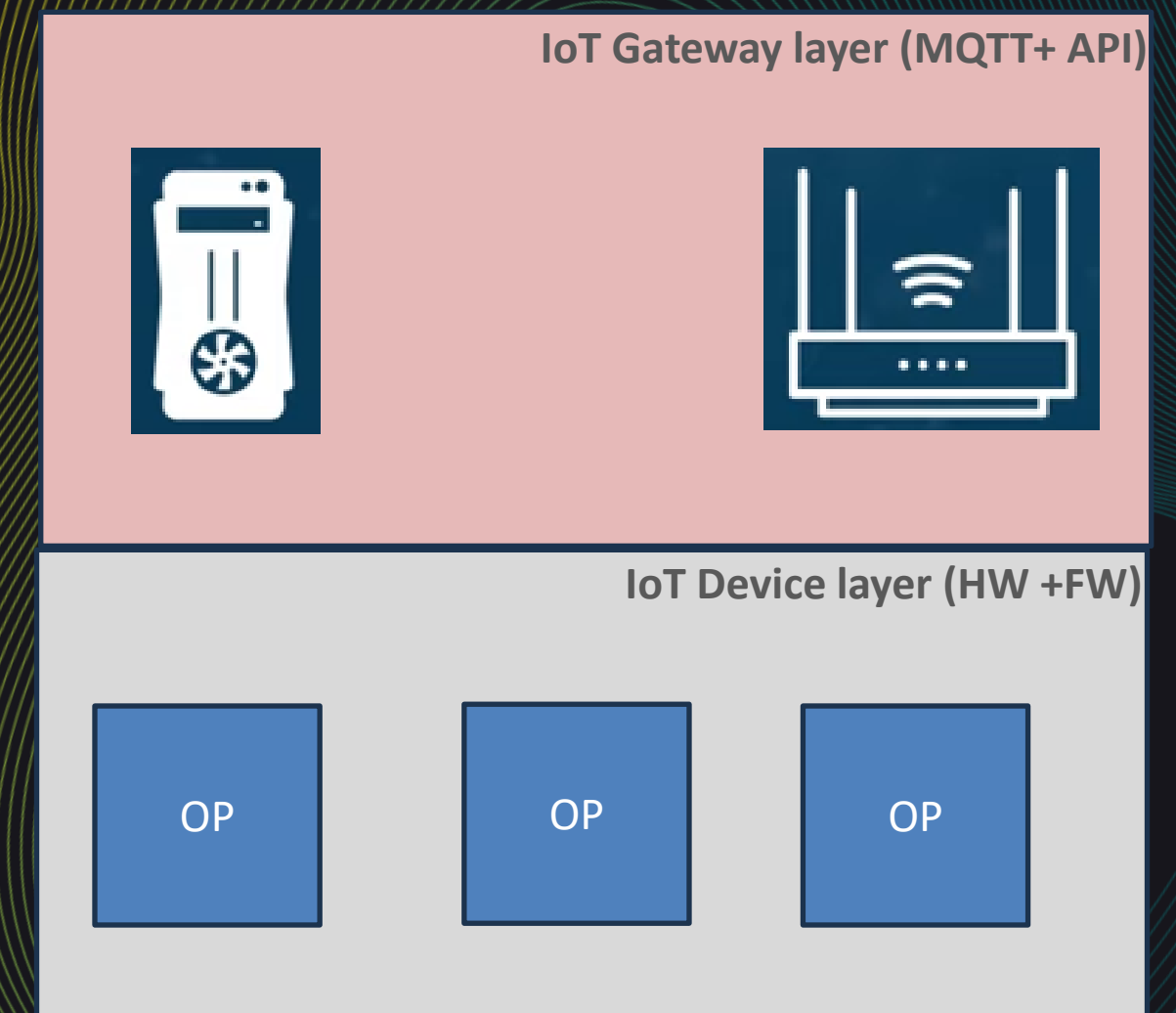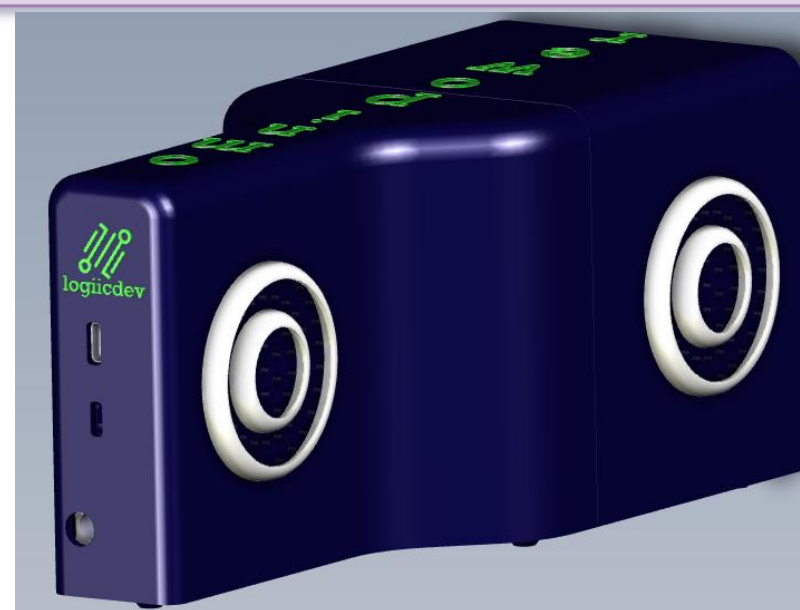6. Connect to your cloud infrastructure.

Easy access to Firmware and data, download options

4

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AIoT (Artificial Intelligence of Things)

- Low power LoRa/BLE/WIFI to MQTT
- Battery-operated OP
- Dual processor (For local housekeeping and Edge AI)
- Individual OP are programmed for Gateway bandwidth
- Python-based API for easy integration

IoT Gateway layer (MQTT+ API)

IoT Device layer (HW +FW)

OP   OP   OP

Stack up, SDK & Framework

Team

CEO & Founder
Deepak V Katkoria, M.Sc

- 20+ Years of Experience in the Industry
- Worked at Leading Positions
  (Intel, Freescale, BAE, NXP, Dialog and Infineon)
- R&D Management

Chief Advisor
Theo Hatzis, M.Sc

- 35+ Years of Experience in the Industry
- Self - Employed (Nürnberg, DE)
- Innovation Management
- Technical Consultant

Investor
Ian Macnamara

- 35+ Years of Experience
  in the Industry
- Investor
- Business Management

Team

Elena Mokina, B.Sc
Business Developer

Sravani Thota, MTech
Power Electronics
Engineer

Fedja Mulagebovic
AI - Hardware
Engineer

Anjaly K
AI - Hardware
Engineer

Board of Advisors

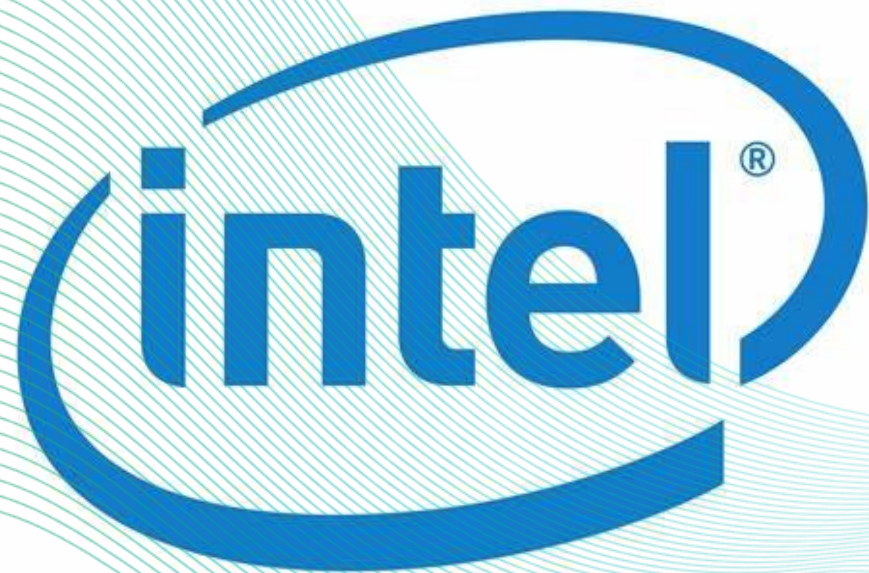**Jakob Udier**
Sales Consultant

Darshna V Katkoria
Project Manager

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