

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311068149 A

(19) INDIA

(22) Date of filing of Application :11/10/2023

(43) Publication Date : 27/10/2023

(54) Title of the invention : RELIABLE AND SECURE FIRMWARE UPDATE WITH DYNAMIC VALIDATION FOR IOT DEVICES

(51) International classification :G06F0021570000, G06F0008650000, H04L0009080000, G06F0011070000, H04L0009320000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :

1)Chitkara University

Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala -----

2)Bluest Mettle Solutions Private Limited

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)MISHRA, Rahul

Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune -----

2)SINGH, Dhiraj

Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune -----

3)MANTRI, Archana

Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala -----

(57) Abstract :

The system (100) for reliable and secure firmware updates for IoT devices consists of key components: a firmware update server (102) securely storing and distributing updates, cryptographic techniques (104) employing digital signatures and asymmetric encryption for authenticity and integrity, a secure communication protocol (106) ensuring encrypted transmission, and a dynamic validation mechanism (110) that real-time verifies updates before installation, guaranteeing only trusted, unaltered firmware is applied. Additionally, error handling mechanisms enable rollback to the previous firmware version in case of update failures, ensuring continuous IoT device functionality.

No. of Pages : 26 No. of Claims : 10