



US 20240214220A1

(19) **United States**(12) **Patent Application Publication**
LU et al.(10) **Pub. No.: US 2024/0214220 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **IMPLEMENTATION METHOD AND
APPARATUS FOR INCREASING NUMBER
OF CERTIFICATES SUPPORTED BY PIV
APPLICATION**(52) **U.S. Cl.**CPC **H04L 9/3263** (2013.01); **G06F 9/45558**
(2013.01); **G06F 2009/45587** (2013.01)(71) Applicant: **FEITIAN TECHNOLOGIES CO.,
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YU**, Beijing (CN)(21) Appl. No.: **18/288,037**(22) PCT Filed: **Jun. 22, 2022**(86) PCT No.: **PCT/CN2022/100353**

§ 371 (c)(1),

(2) Date: **Oct. 23, 2023**(30) **Foreign Application Priority Data**

Jul. 8, 2021 (CN) 202110769859.9

Publication Classification(51) **Int. Cl.****H04L 9/32** (2006.01)**G06F 9/455** (2006.01)(57) **ABSTRACT**

An implementation method for increasing the number of certificates supported by a PIV application, the method comprising: a virtual machine of a key device is powered on; a data endpoint address is set to be an endpoint address of a CCID interface that receives instruction data; according to the instruction data, APDU data used for the authentication of a PIV application is obtained; and the APDU data used for the authentication of the PIV application is sent to a PIV application of the key device; the PIV application calls an API interface to obtain a CCID interface number, obtains a PIV device certificate number according to a general device certificate number in the APDU data used for the authentication of the PIV application and the CCID interface number, obtains a PIV certificate according to the PIV device certificate number, and operates according to the PIV certificate to obtain operation results; and the virtual machine returns the operation results to an upper computer according to the data endpoint address. The method further comprises: when a USB interrupt is triggered, a USB interrupt process is executed. The described method overcomes the limitation of the number of certificates supported by a PIV application while simplifying operations.

