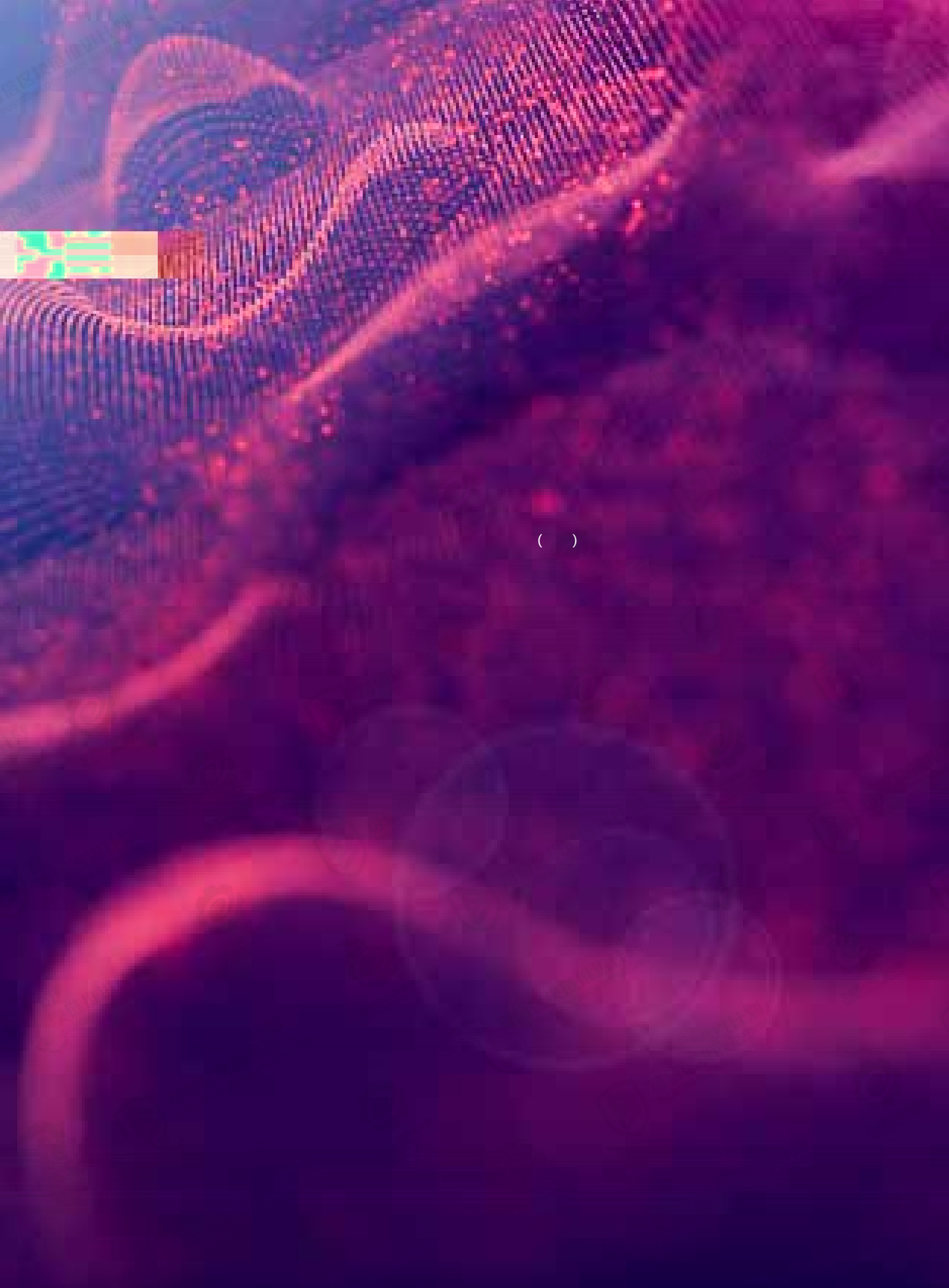
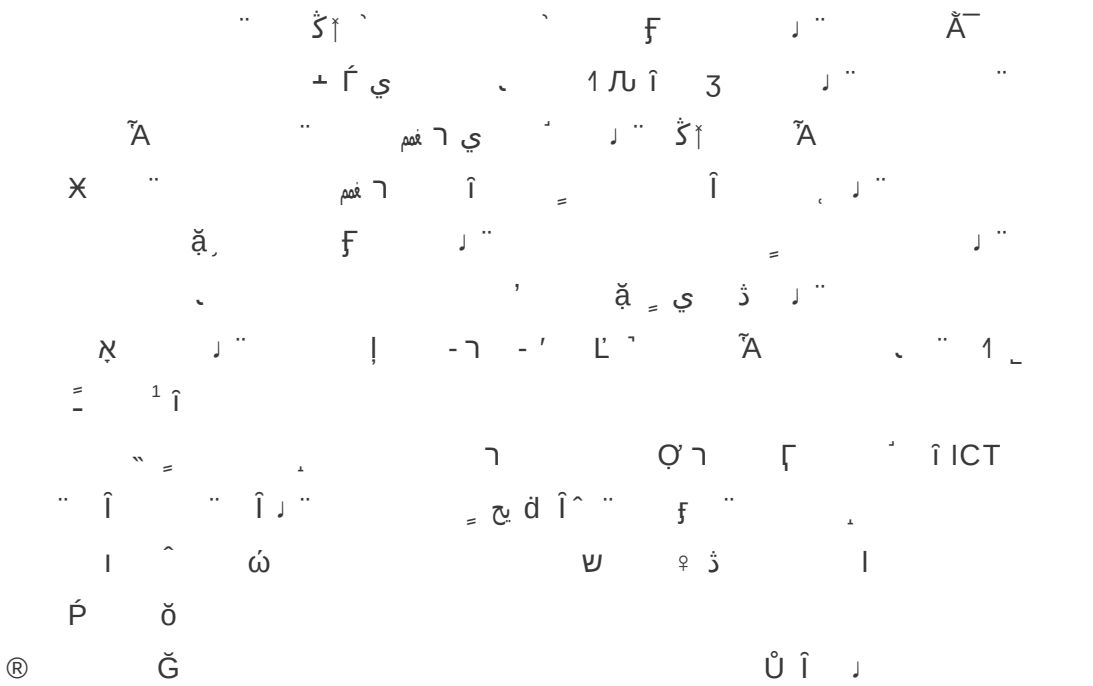


1.0

1.0



1.6： 5000 ¨ ɓ ¨ ♩ ¨

ʒ 9.9% î Ă 1.6% GDP · ¨ ¨ ♩ ¨

= ‘ ¨ Î Î ɹ Ʌ ß̈

î 2019ת ♩ ¨ ¨ 206： 2020ת

255： î ♩ ¨ ˛ ˜Ă ˜ ؤ خ ♩ ¨

î = ɓ Î Ợ ˛ - Ă˜

Î ڈ ڭ ר ’ ♩ ¨ ` Ợ ـ ـّ ` ڭ ¨ ʃ

’ Ґ ế ²ففم ʒ ♩ ¨

˜ ɓ ـ ؛ ر î

ERP Î MES Î CRM ¨ ƒ

ڈ ڭ ¨ ƒ ـ ـّ Ƒ ؛ ¨ ¨ ƒ ؤ

ڈ ڭ ¨ ƒ ـ ـّ Ƒ ا ʌ ‘ ؤ ر î

ʒ ڈ ڭ ¨ ♩ ¬ ؛ î Ɽ ـ ا ʌ

, ۷ ệ ؛ ’ ᵱ Ă ¡

Ľ - ˜ ؛ Ƒ ؛ î

ɓ c ᵱ Î ר ¨ ♩

ڈ ڭ ᵱ Ă ڈ ڭ Î Î ۷ Î Ш ʒ ـ ế

ר ڈ ڭ ’ ᵱ Ă ؛ Î Ґ

Î ר ¨ Ă ♩ ¨ ڈ ڭ ¨ ♩ ؛ î

’ ﻉ ר ا ʌ Î ¨ ا ʌ ا ʌ ᵱ Ă ﻫ

ر ڈ ڭ ¨ ♩ ـ ؛ î ـث Î ـث ڈ ڭ

ᵱ Ă ’ î

1.0

Î

ˌ ˩ ¨ ˈ ɻ î ˷˷ ˍ

ı Î ı Î ı خ ˷˷

Ã – خ ← Î ← , Î ı Î ′ ặ ج

ı ᴎ ȝ î ˌ

ı Ă ,

ƨ ı Ţ ƨ ȣ î

˷ ƨ ˽ ¨ , ERP ⊢

0 https://www.nist.gov/news-events/news/2019/02/nist-blockchain-provides-security-traceability-smart-manufacturing

1 https://www.bmwi.de/Redaktion/EN/Publikationen/Digitale-Welt/blockchain-strategy.pdf?__blob=publicationFile&v=2

2

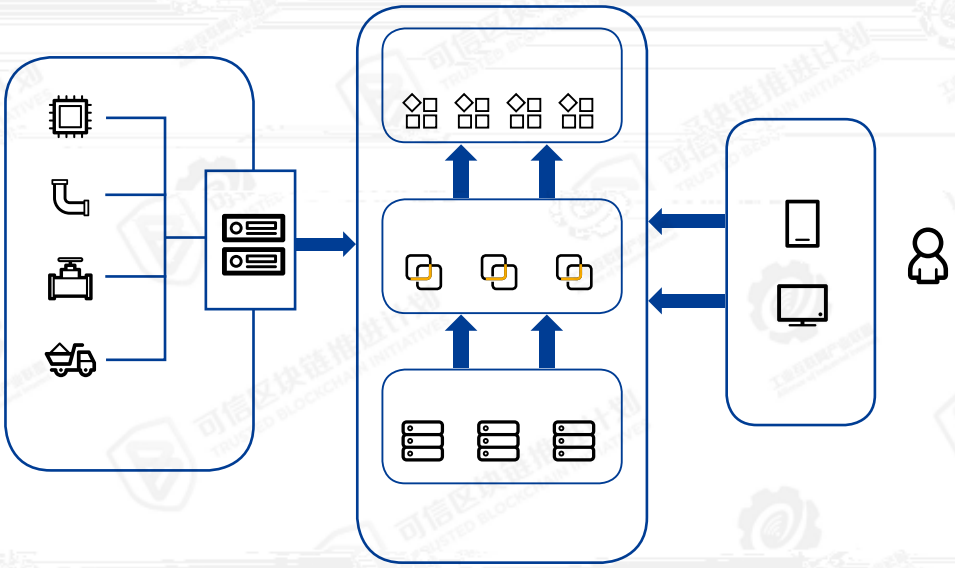
Ш Opportunities and Use Cases for Distributed Ledger Technologies in IoT ř ˛ ę

1 Î = î ɞ ♩ W¨ IEEE Ă2019ת ♩ ↵ ˛ ICEET ˛ ʐ Ř˛ ę ♩ ¨ 4.0 ð Implications of Blockchain in Industry 4.0 ř ˛ ę Ă♩ ¨ ’ Î Î Ş Ş = Ш ɞ ˚ î 2020ת1 ♩ ¨ , IIC Industrial Internet Consortium ʐ ↵ I Trusted IoT Alliance TIoTA ± Ӿ˛ ę Ă♩ ¨ ’ î 2020ת4 27ؤ ¯ î WEF ʐ / ˛ ę Ă ƨ ǎ Ш Ė î

˛ ę ɔ ˝ = , Ґ ɞ ’ Ş Ş ˝ ⁋ c Î Î o – ˛ ʐ [8] î Ơ ˛ ę ę- ⁋ c Ş Ş î ˛ ˝ Ă _ I ’ I ˛Ơ ɞ¨ ˛ ę H I Ă ¨ Ė ɞ ɔ Ş† Î ˛Ơ I _ , ˝ Î ˛ Î Î ‘ Î

ي 3 ‘ Î

¨ ← Î ˜ d Î Ƨ ˛ ,



3

IEEE 2019 ICEET 4.0 Implications of Blockchain in Industry 4.0 GE 3D 3D

FIDO PKI/CA U Fast Identity Online [10] IFAA Internet Finance Authentication Alliance [11]

[12]

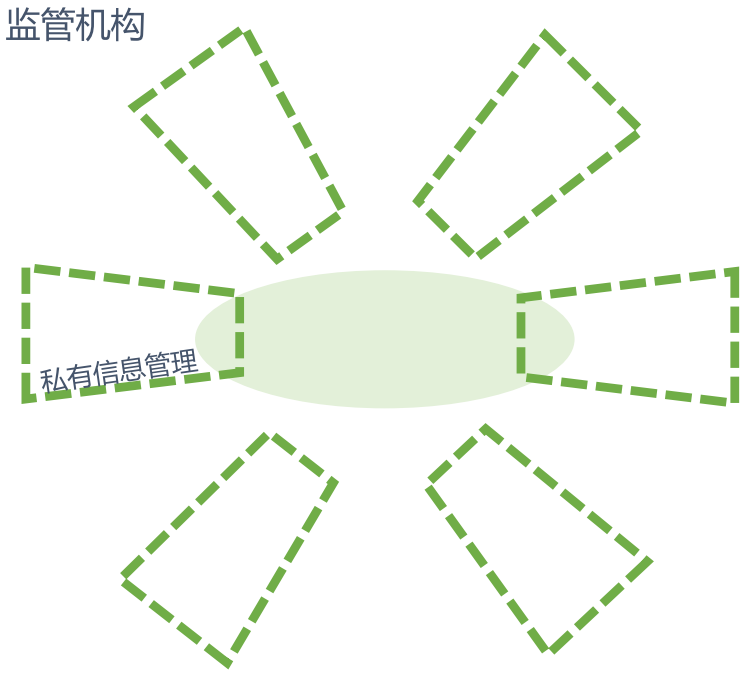
[13]

Ouaddah A, Abou Elkalam A, Ait Ouahman A. FairAccess: a new Blockchain based access control framework for the Internet of Things. Security and Communication Networks, 2017.

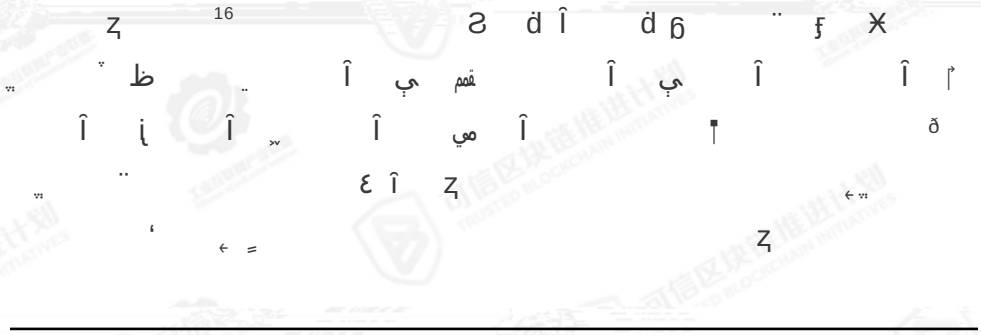
Huberman B A . Ensuring Trust and Security in the Industrial IoTThe Internet of Things (Ubiquity symposium)[J]. Gastroenterology, 2002, 122(5):1235-1241.

专栏
1

:


监管机构
私有信息管理

专栏
2



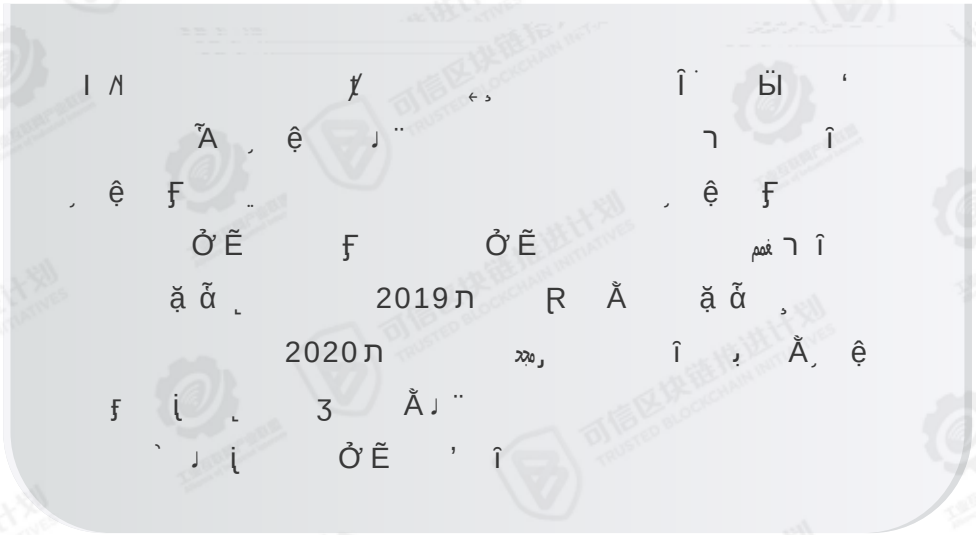
1 Teslya N , Ryabchikov I . Blockchain-based platform architecture for industrial IoT[C]// Conference of Open Innovations Association. IEEE, 2018.

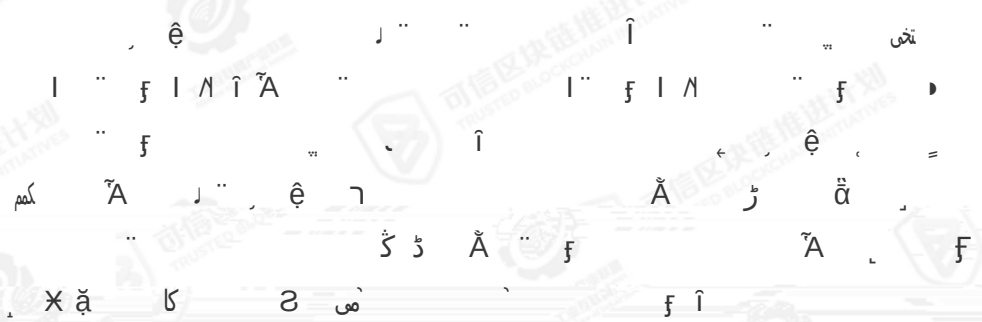
专栏
3

专栏
4

2 Dorri A , Kanhere S S , Jurdak R , et al. Blockchain for IoT security and privacy: The case study of a smart home[C]// 2017 IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops). IEEE, 2017.

专栏
5






核心企业
一级供应商

专栏
6

[20]

[21]

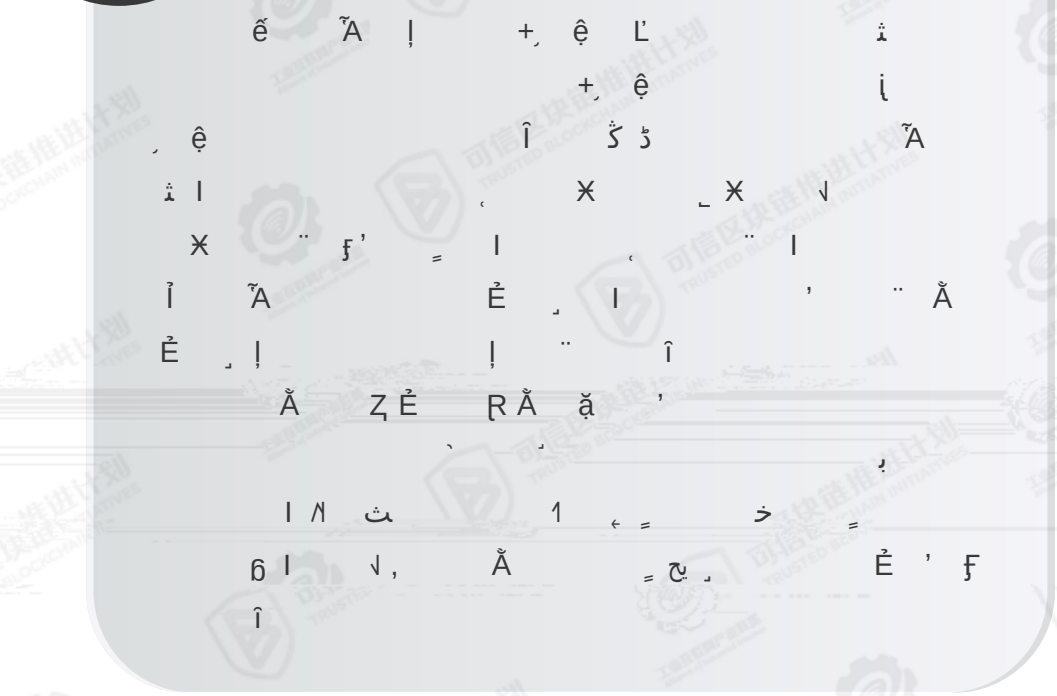
(

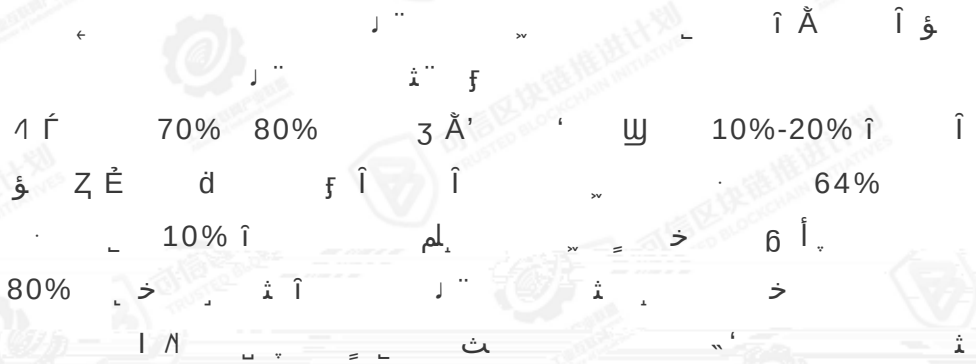
http://www.gov.cn/zhengce/content/2017-10/13/content_5231524.htm

(

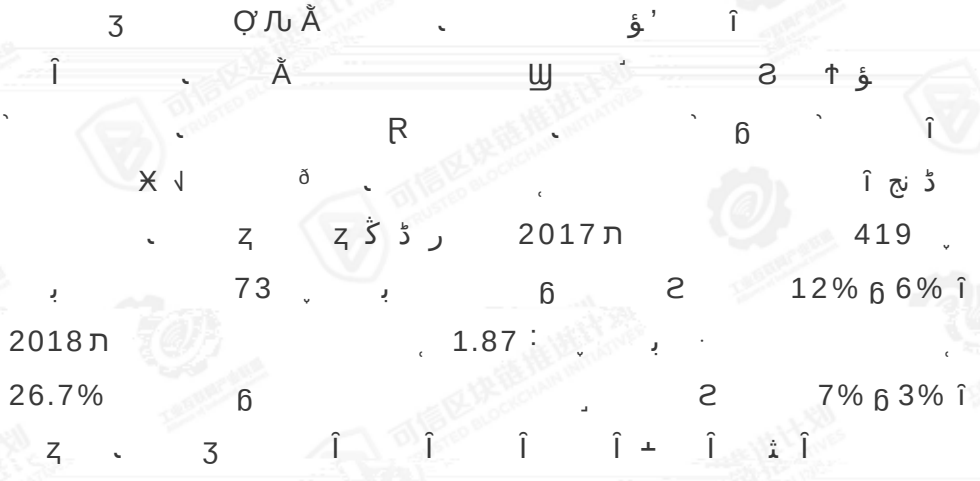
http://www.gov.cn/zhengce/content/2017-10/13/content_5231524.htm

专栏
7





Ƶ Ė[22] î



专栏
8

专栏
9

[13] Christidis K , Devetsikiotis M . Blockchains and Smart Contracts for the Internet of Things[J]. IEEE Access, 2016, 4:2292-2303.

[14] Shi-Cho Cha, Jyun-Fu Chen, Chunhua Su. A Blockchain Connected Gateway for BLE-based Devices in the Internet of Things. IEEE Access (Volume: 6), Page(s): 24639 – 24649.

[15] Lin J , Shen Z , Miao C . Using Blockchain Technology to Build Trust in Sharing LoRaWAN IoT[C]// the 2nd International Conference. 2017.

[16] Teslya N , Ryabchikov I . Blockchain-based platform architecture for industrial IoT[C]// Conference of Open Innovations Association. IEEE, 2018.

[17] Dorri A , Kanhere S S , Jurdak R , et al. Blockchain for IoT security and privacy: The case study of a smart home[C]// 2017 IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops). IEEE, 2017.

[18] http://www.gov.cn/zhengce/content/2017-10/13/content_5231524.htm

[19] 2016 5 3

[20] : 2017 4 .

[21] 2015

[22] (2015)

[23] 2018-2024