

TeleTrust-interner Workshop 2011

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Trusted Clouds: Chances for Security, Resilience and Scalability

Who we are

Background:

- Roots in Cryptography and Operating Systems Security Research
- One of the technology leaders in Trusted Computing
- Based on substantial amount of own IP



Mission



Still applied approaches

- „Airbag approach“:
If it happens, it should hurt less.

Adequate approach :

- „ESP strategy“: Avoid skidding,
before it happens.

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Mission:

- Providing comprehensive Information Flow Control
- Seamless for the user, easy to manage and auditable

Customers:

- Strong business in Europe and Germany
- Focus on Midsize-companies, also organizations like NATO SACT, DoD and Defense Ministries of more than a dozen countries.
- OEMs: TCG, Raytheon, EADS, Wincor Nixdorf, ...

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security technologies

Beispiel: Dropbox

In guter Gesellschaft...

Aber auch: Inhärente Gegensätze

- Geschäftsmodell vs. Sicherheit



The Cloud

Thesis:

“The Cloud is a chance for improving companies’ security.”

- Looking at: Small and midsize companies (200-10,000 employees)
- IT-Security is an infrastructure topic, compliance nearly absent
- Information Flow control rather than traditional access control policies
- Infrastructure security as part of the service

Cloud, eine (willkürliche) Definition

Cloud als Datenspeicher „Storage“

- Beispiele: Dropbox, iCloud
- Idee: „Storage effizienter und günstiger durch zentralisierte Dienstleister“

Cloud als IT-Infrastruktur

- Beispiele: Angebote großer Dienstleister
- Idee: IT-Infrastruktur virtualisiert, intern oder extern

Cloud als Application-Hoster

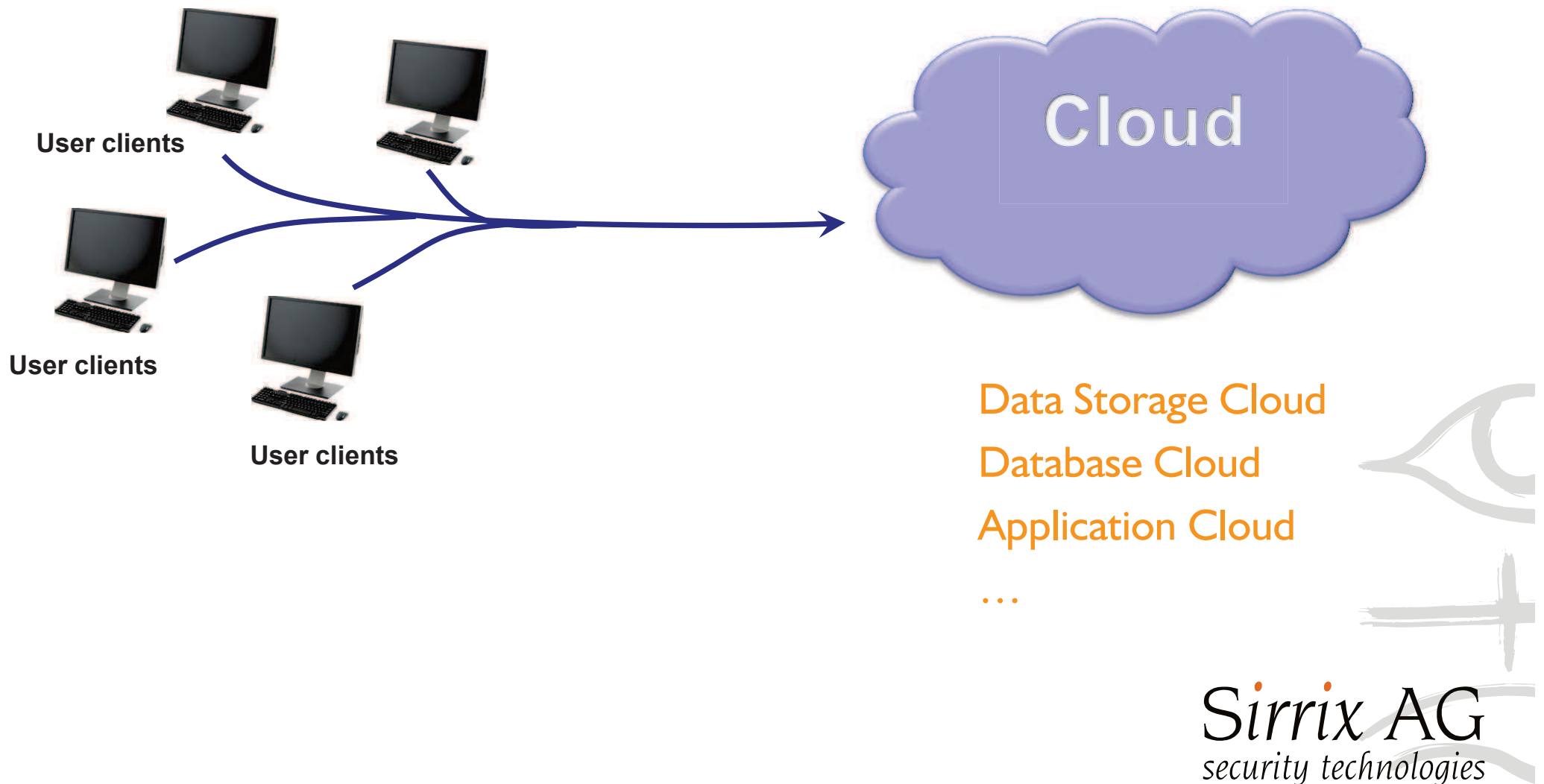
- Beispiele: Salesforce (extern) ,
- MS Dynamics (intern/Extern), NetApp, Citrix
- MS Office...
- Aspekte: Client-Plattform? Bezahlmodelle? Offlinefähigkeit? (Caching)

Requirements for Trusted Clouds

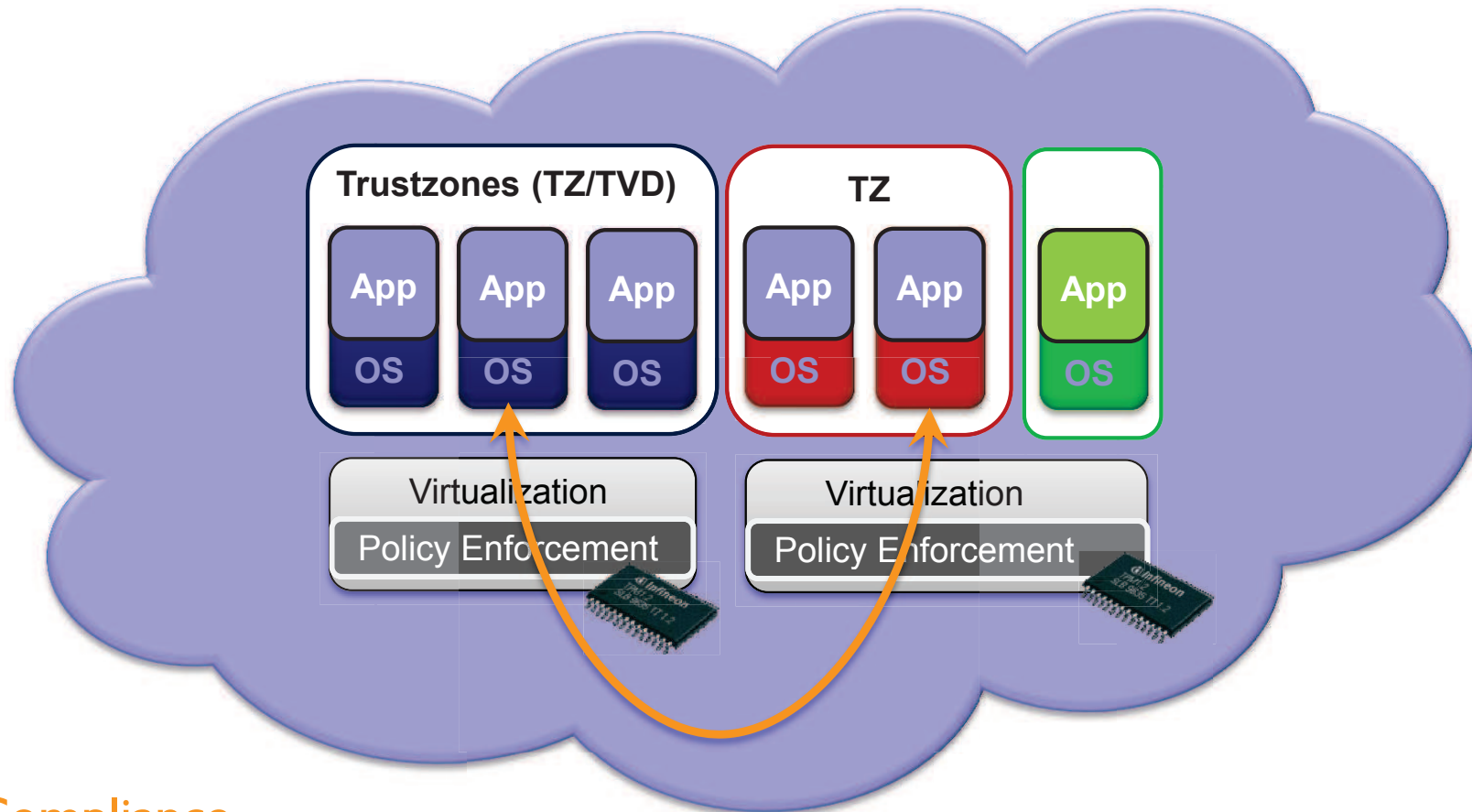
- 1) **Strong Authentication**
 - Multi-factor, cryptographic authentication
- 2) **Trustworthy Virtualization**
 - Strong isolation
- 3) **Trusted Platforms**
 - Reliable integrity verification



Example Scenario



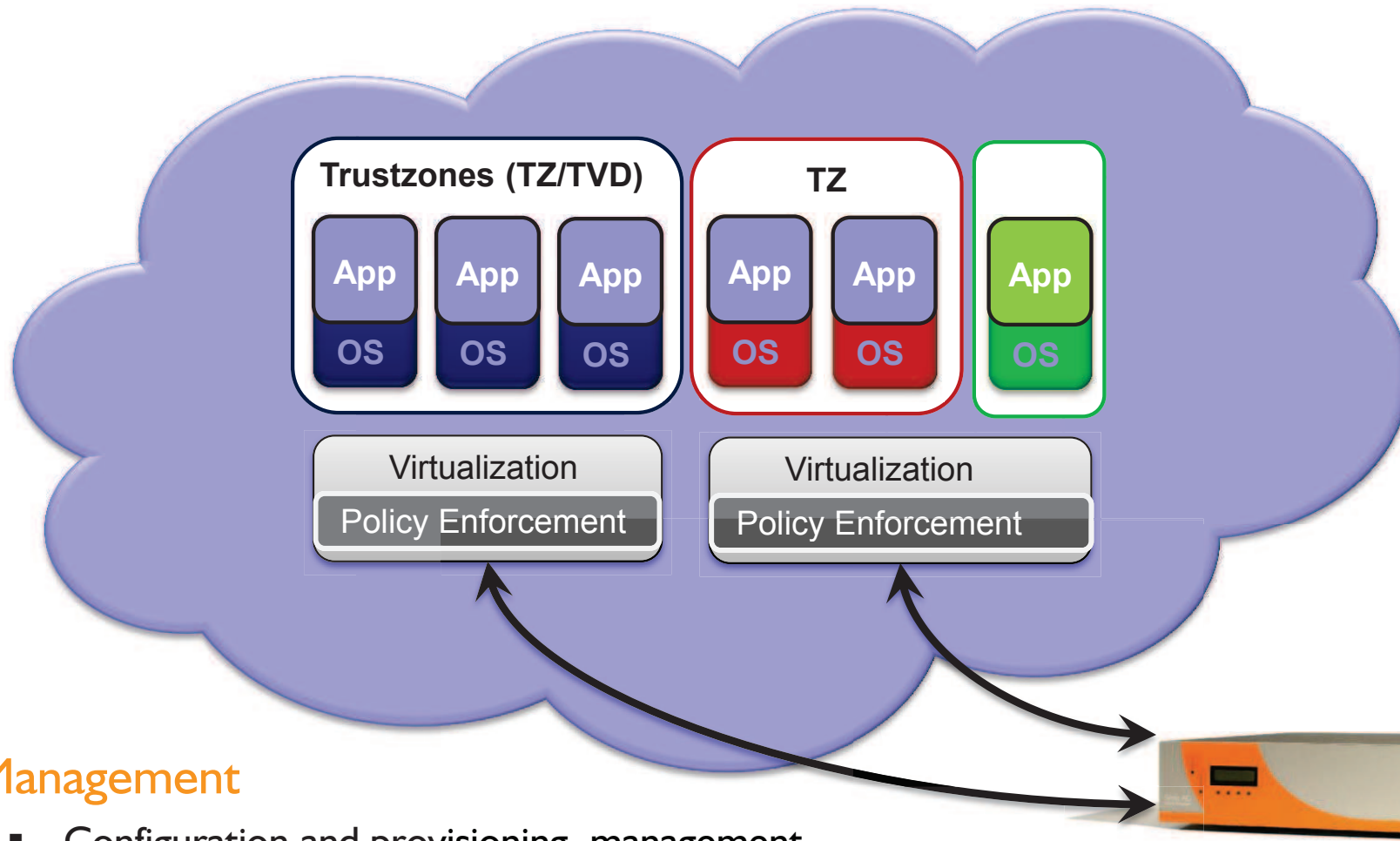
Trusted Cloud



Compliance

- By audit
- By attestation (technically)

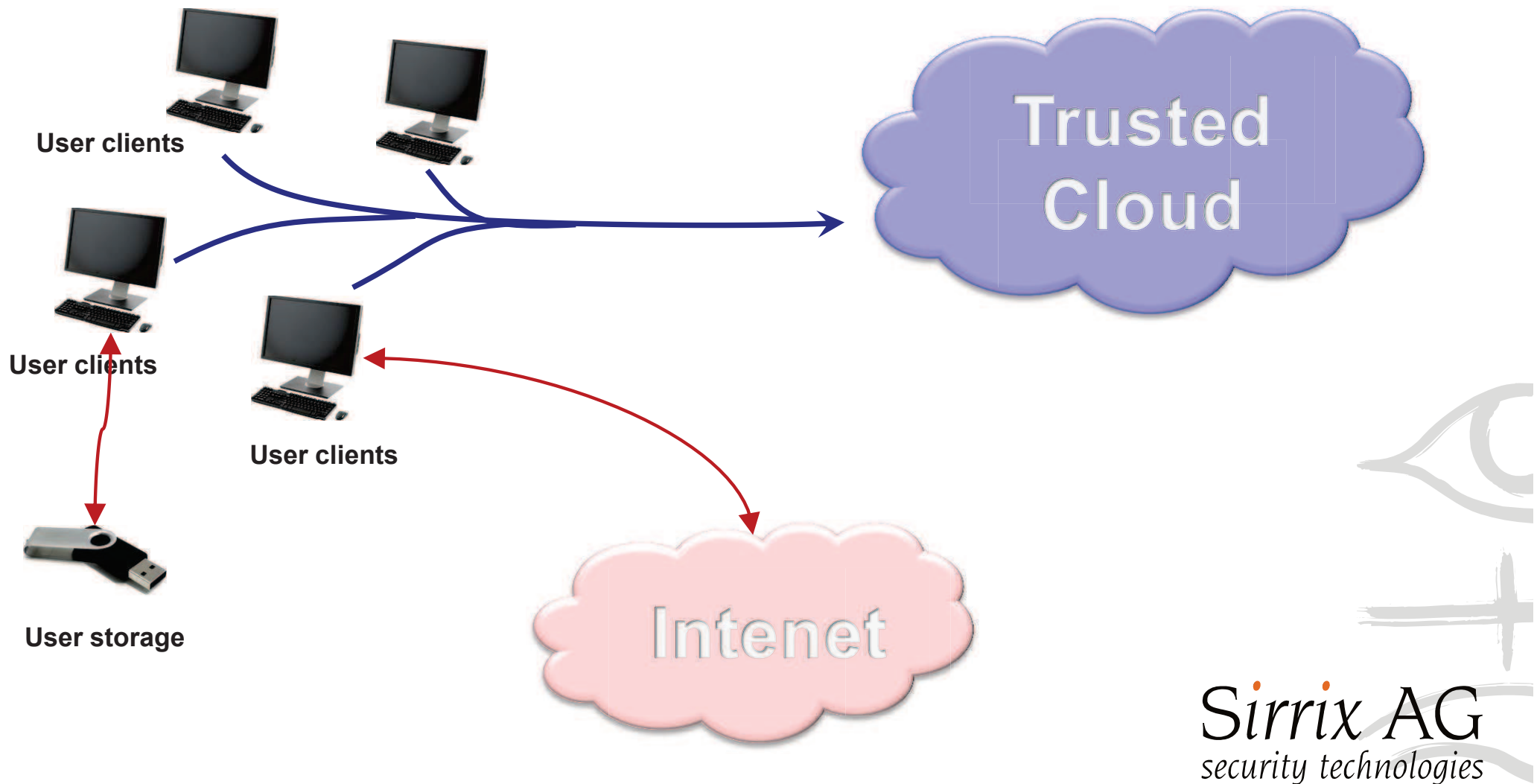
Trusted Cloud: Management



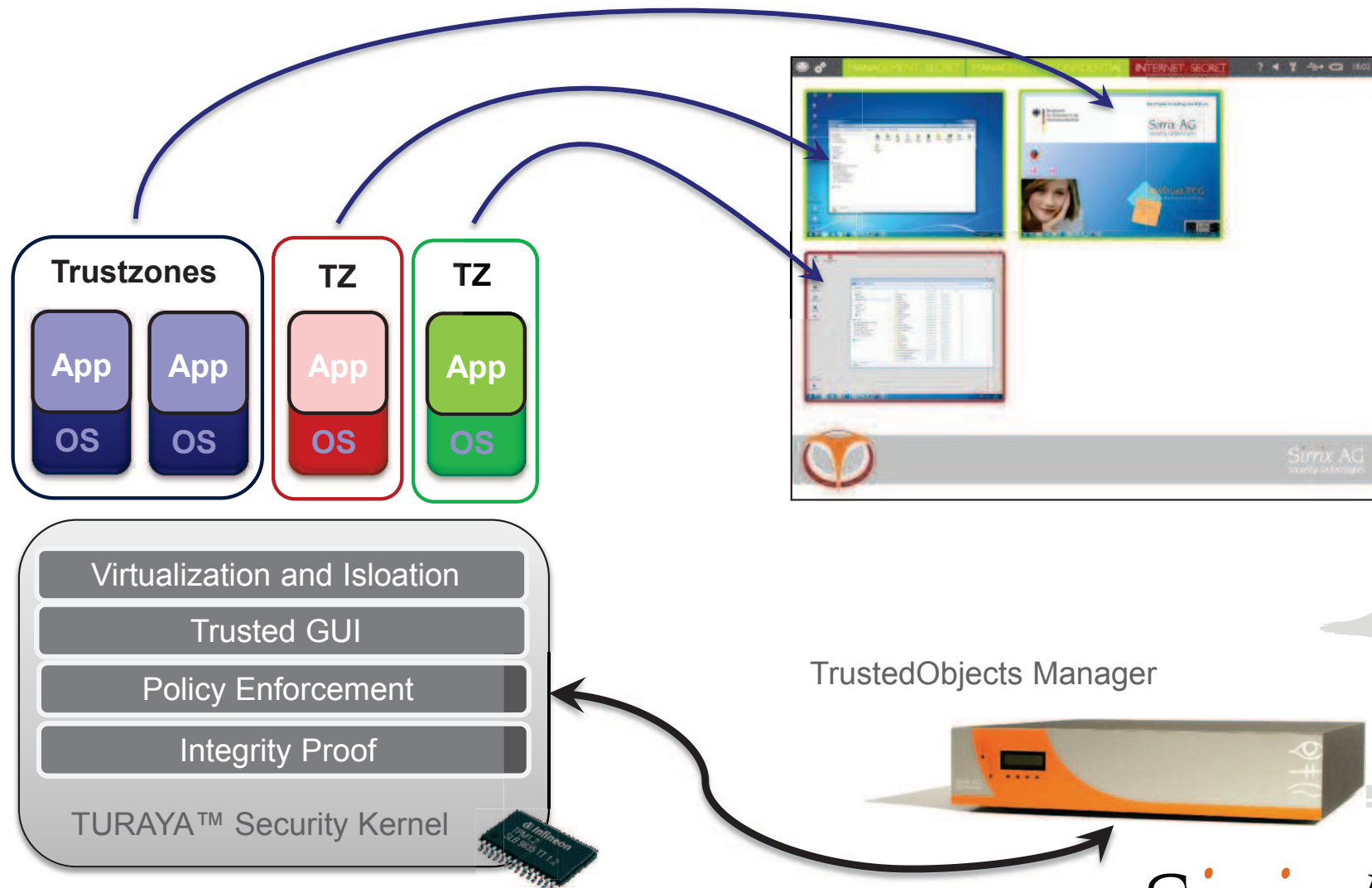
Management

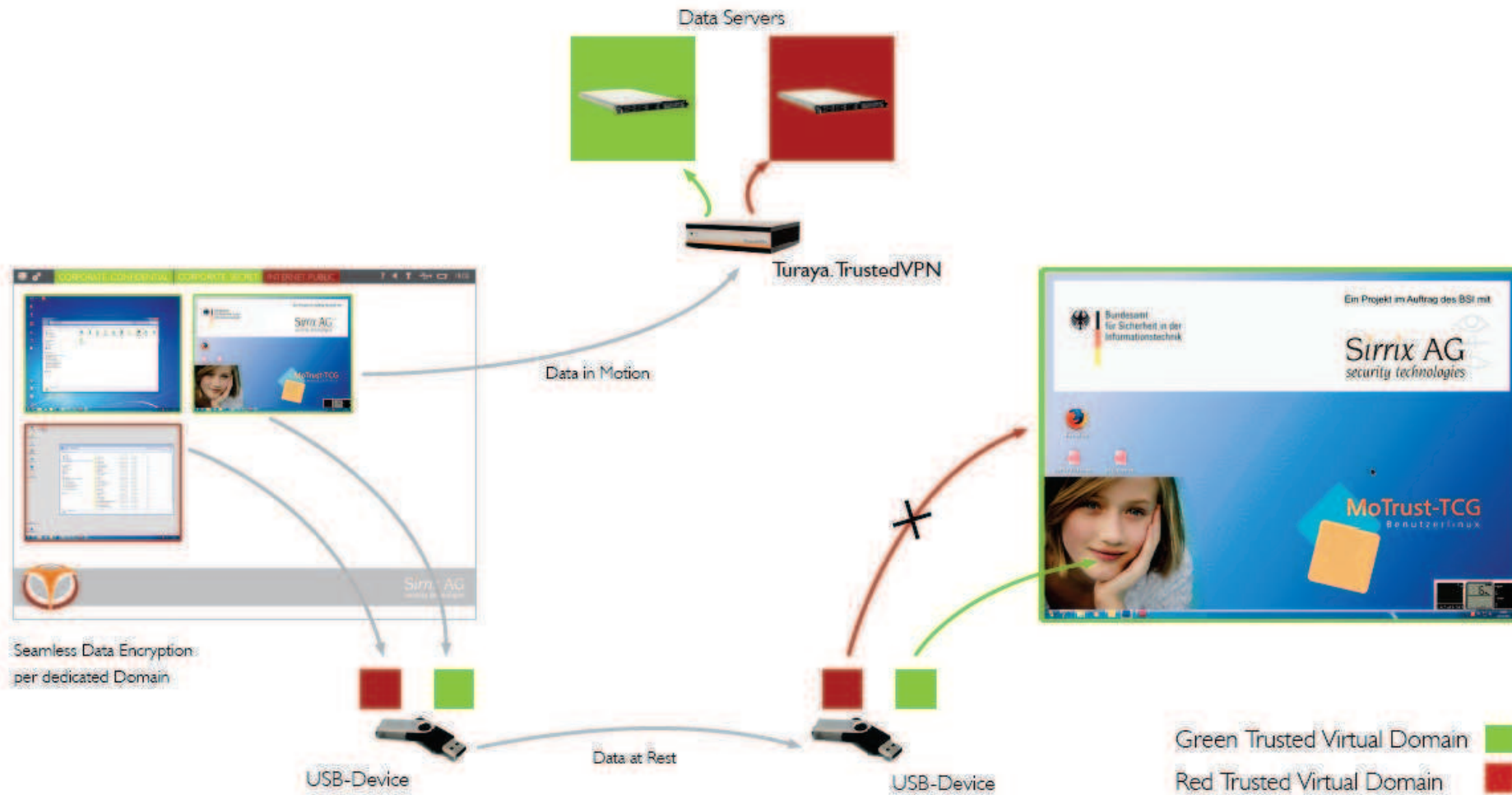
- Configuration and provisioning management
- Security policy management

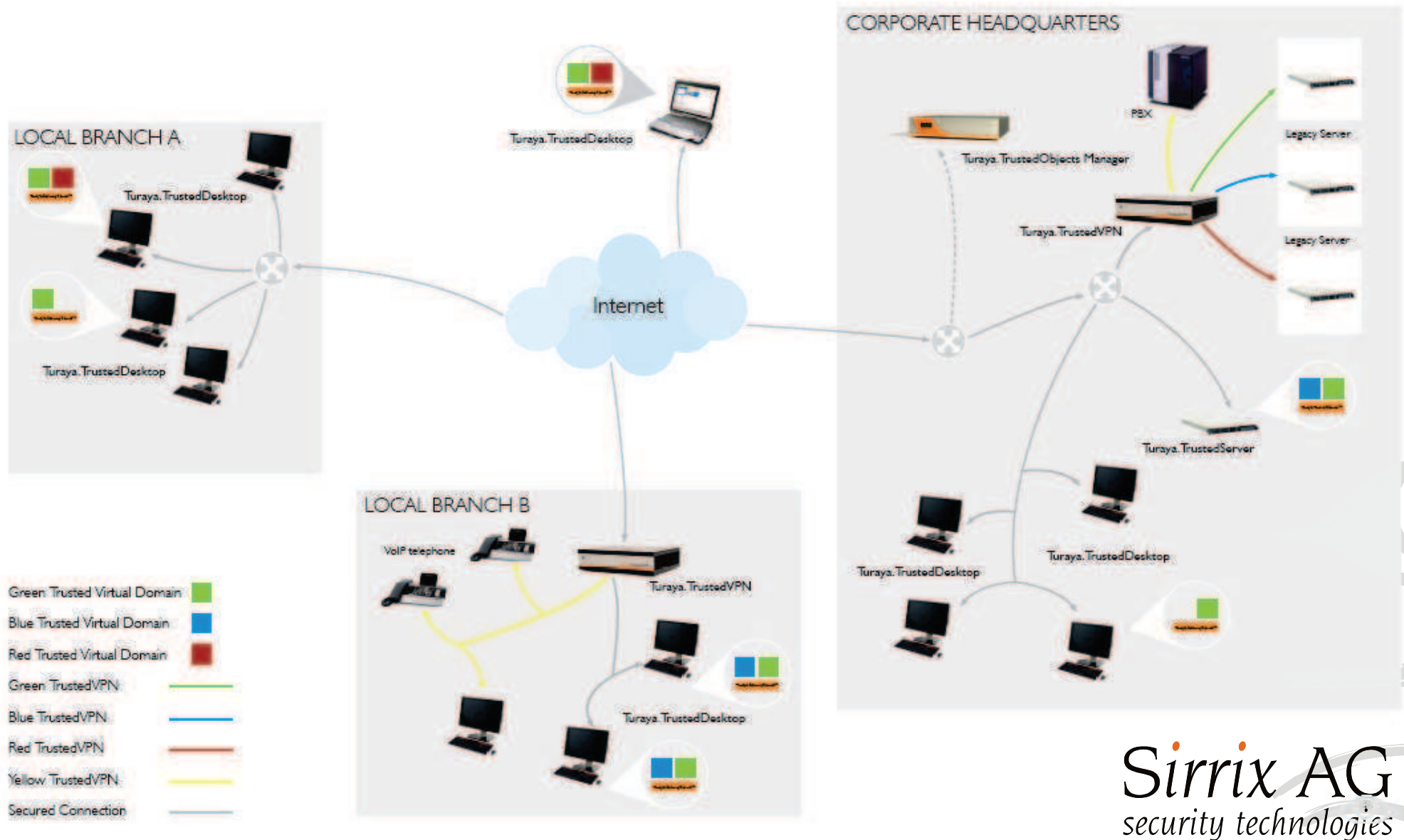
Back to Scenario



Trusted Platforms at the Endpoints



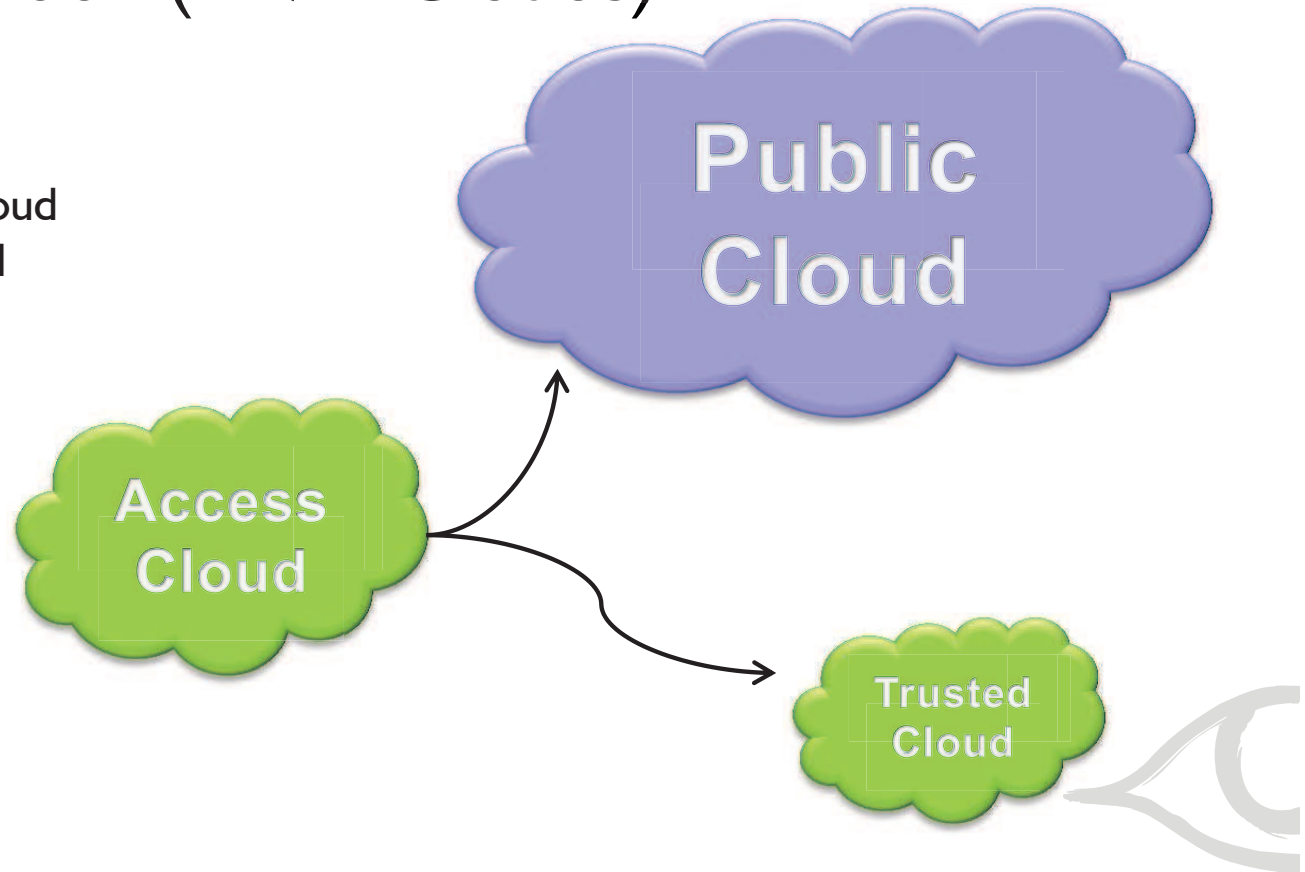




Trusted Clouds – Outlook (FP7-TClouds)

Clouds of Clouds

- Expanding a small trusted cloud by using a larger public cloud



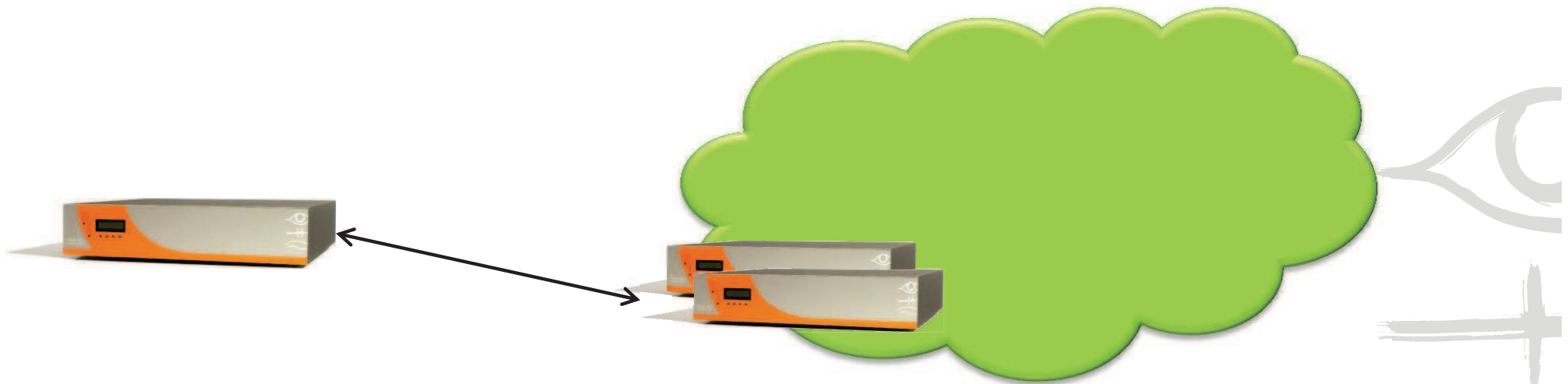
Trusted Clouds – Outlook

Clouds of Clouds

- Expanding a small trusted cloud by using a larger public cloud

Management and provisioning in the cloud

- Distributing security management to allow deployment inside the cloud



Trusted Clouds – Outlook

Clouds of Clouds

- Expanding a small trusted cloud by using a larger public cloud

Management and provisioning in the cloud

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Mobile and autonomous entities accessing the cloud

- Concept of TZ on mobile user devices (smartphones, tablets)
- Enabling trustworthy M2M authentication to allow for cloud resource access



It's your turn now . . .

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