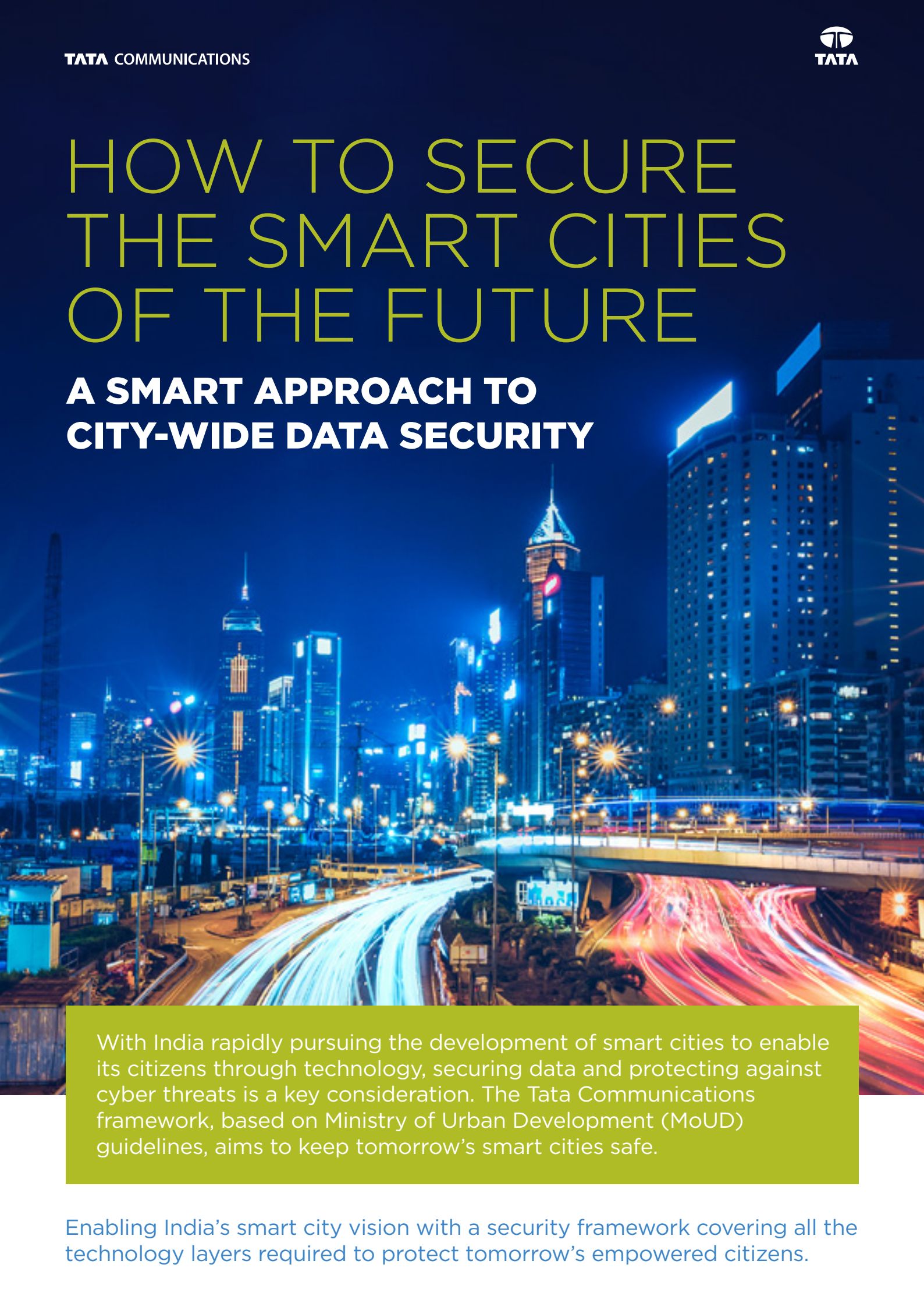


HOW TO SECURE THE SMART CITIES OF THE FUTURE

A SMART APPROACH TO CITY-WIDE DATA SECURITY



With India rapidly pursuing the development of smart cities to enable its citizens through technology, securing data and protecting against cyber threats is a key consideration. The Tata Communications framework, based on Ministry of Urban Development (MoUD) guidelines, aims to keep tomorrow's smart cities safe.

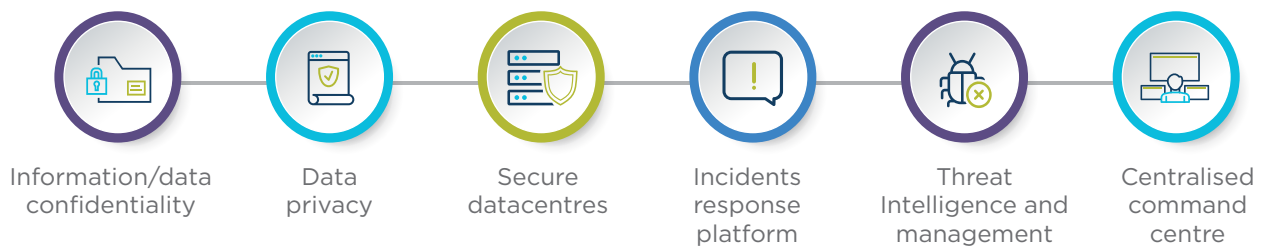
Enabling India's smart city vision with a security framework covering all the technology layers required to protect tomorrow's empowered citizens.

Creating smart cities is one of GOI's prime initiatives to make technology accessible to its citizens, with a proposal to cover 100 cities between FY 2015-16 to FY 2019-20. Smart cities use technology to deliver a higher quality of living for their citizens, with its environment, infrastructure, and even governance adapting efficiently to their needs. It means less waste and more personalisation in every interaction of a connected and informed society. These real benefits accompany real risks which must be mitigated.

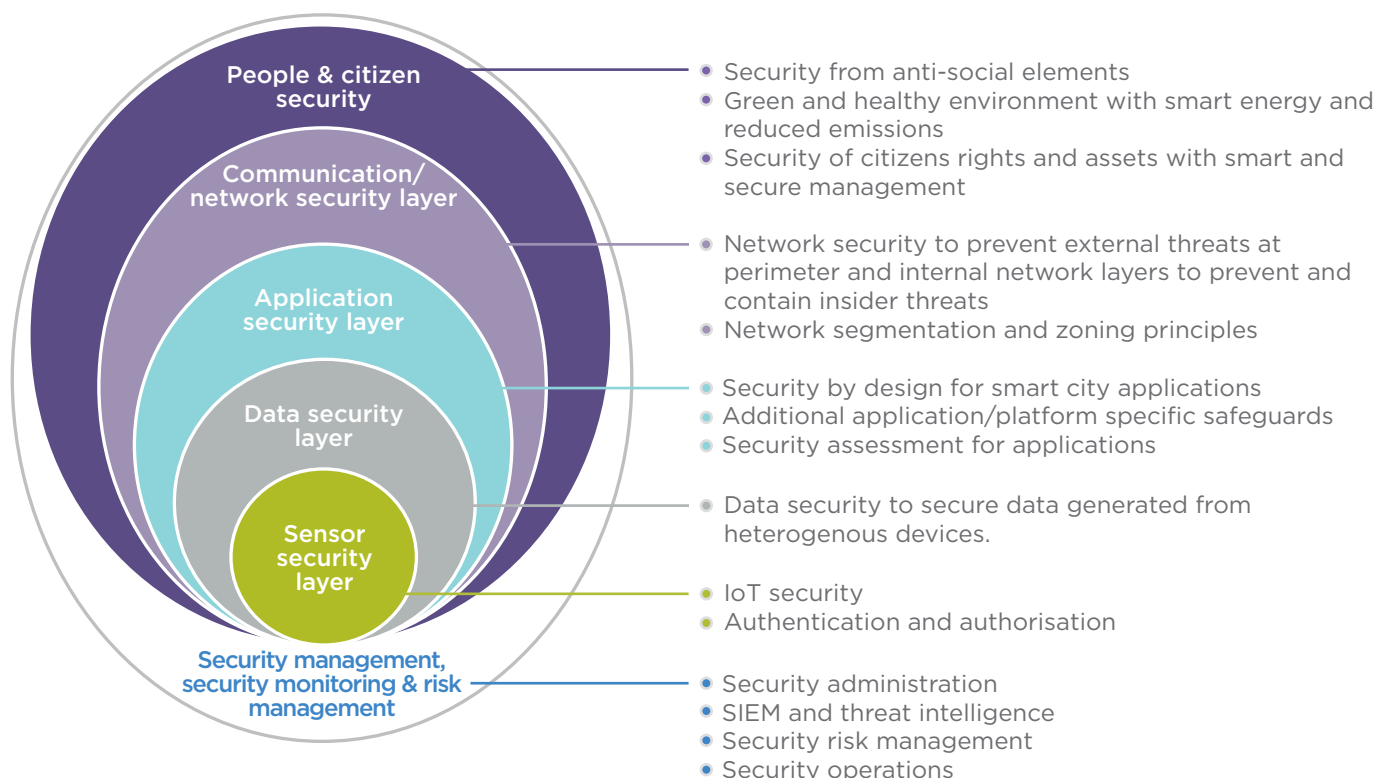
Risks and implications in smart cities

-  **Insecure hardware** leading to IoT vulnerability and botnet attack.
-  **Smart devices are either not regulated** or vendors are evading regulations to manufacture low cost smart devices.
-  **Insufficient bandwidth** bringing down the infrastructure.
-  **Lack of centralised security** compromising datacenters, IT infrastructure and network systems.
-  **Large attack surface** exposing entire system to attacks.
-  **No data privacy and protection** leading to breach of privacy and un-authorized data usage.
-  **Vulnerable applications** making every smart device a potential security risk.

Tata Communications Smart City Security provides



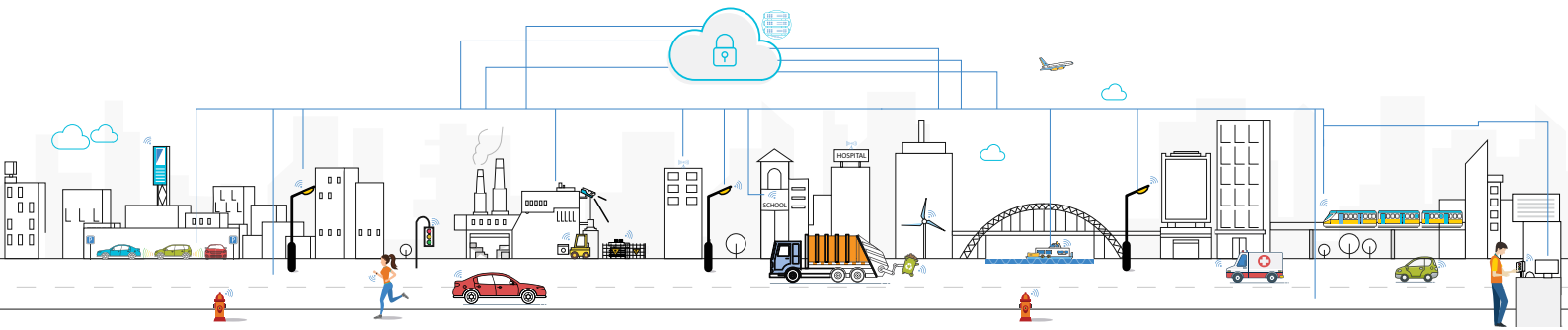
Tata Communications comprehensive smart city security architecture



How Tata Communications can enable smart cities

SECURITY LAYER	SECURITY FACET	OUR SOLUTION	SALIENT FEATURES
COMMUNICATION/ NETWORK SECURITY	DDOS	Tata Communications cloud DDoS services - mDDoS	<ul style="list-style-type: none"> • 21 scrubbing farms with execution near to attack source • Global DDoS cloud • 15 Gbps of ingestion capacity
	Network firewall for DC	2 tier firewall architecture	<ul style="list-style-type: none"> • Tata GCC solutions are multi-tenant and have provision to commission separate firewall instance catering to a specific customer environment
APPLICATION SECURITY	Layer 7 DDOS	Tata Communications cloud application DDoS services - mDDoS	<ul style="list-style-type: none"> • Addressing application layer DDoS prevention needs • Automated and integrated threat intelligence
	SSL offloader	Dedicated virtual appliance for decryption	<ul style="list-style-type: none"> • SSL decryption at perimeter to in order to detect encrypted attacks
	Multi-factor authentication	2 factor authentication	<ul style="list-style-type: none"> • Multiple layers of authentication
	Web application firewall	Market leading WAF appliances	<ul style="list-style-type: none"> • Firewall protection specialized for web applications • Out of the box protection from OWASP top 10 attacks
DATA SECURITY	Server endpoint protection	Hypervisor layer integrated host security solution	<ul style="list-style-type: none"> • Anti-malware, HIPS, change control and application control for Smart City DC infrastructure
	Database security	Database access monitoring	<ul style="list-style-type: none"> • Detection anomalies from appropriate way a database is accessed • Gauge effectiveness of database security
SECURITY MONITORING, DEVICE & RISK MANAGEMENT	Vulnerability management	Tata Communications vulnerability management services	<ul style="list-style-type: none"> • Vulnerability assessment • Vulnerability remediation assistance
	Penetration testing	Tata Communications penetration testing services	<ul style="list-style-type: none"> • Can be performed externally over the internet for internet exposed applications • Use of multiple tools • Manual as well as automated validation
	Security Information and Event Management	Tata Communications SIEM-as-a-service	<ul style="list-style-type: none"> • Broad out-of-the-box support of disparate devices • EPS based metering and billing • Parser development of niche devices that are not supported out-of-the-box
	Threat intelligence	Threat intelligence feeds integrated with SIEM	<ul style="list-style-type: none"> • Updated reputation based intelligence of traffic • Zero day attack prevention possibilities • Advanced vulnerability information
	Privilege identity management	Privilege identity management through market leading tool	<ul style="list-style-type: none"> • Identity and access management of power users of smart city infrastructure • Dynamic password creation • Authorisation control and management • Session record management for auditing purposes
	Risk and compliance management	Tata Communications risk management services	<ul style="list-style-type: none"> • Consulting and assistance during entire lifecycle of risk management • Risk management aligned to best industry standards
	Security operations centre	Tata Communications SOC-in-a-box	
Bespoke SOC solutions available in captive, hybrid and remote operations deployment models			<ul style="list-style-type: none"> • SOC environment dedicated for a specific smart city environment • Security device and incident management

Case study – IT security of a large Indian smart city



CHALLENGE

- Host smart city data in secure DC
- Scalable hosting and security environment
- Best-in-class security standards
- Multi-layered security
- Complete surveillance of DC and DR
- SLA backed security service levels
- Consolidated security and service reports dashboard

OUR SOLUTION

- MeitY empaneled datacentre
- Dedicated Government Community Cloud
- Best in class security standards - ISO 20000, 22301 and 27001
- Multi-layer security - DDoS, Firewall, IPS, ATP, WAF and SIEM
- Advanced SIEM systems
- Integrated service visibility portal

BENEFITS

- Cost benefits of shared hosting
- Security of segregated Government only cloud
- High performance datacentre for smart city applications
- Fully compliant to regulations
- Robust security posture
- Multi-tier security – physical, network, hosting, applications and data
- Round the clock security monitoring and management
- SLA bound Managed Security Services

Tata Communications – You ideal smart city security partner



Solutions based on recommendations of Ministry of Housing and Urban Development



Certified and compliant cloud and hosting - MeitY empanelled, STQC compliant, ITIL, SSAE 16, ISO/IEC 14001



Leading DDoS service provider with 21 scrubbing centres



240+ POPs across 6 continents



Fully managed virtualised environments



Dedicated Government Community Cloud



Managed Security Services - ISO/IEC 27001 & 20000, ISAE Type-II, CSA-STAR, PCI DSS and HIPAA



Flexible cloud deployment model – DC & DR or DR only



Industry and technology certified experts available 24 x 7 x 365



300+ dedicated security experts

For more information, visit us at www.tatacommunications.com

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