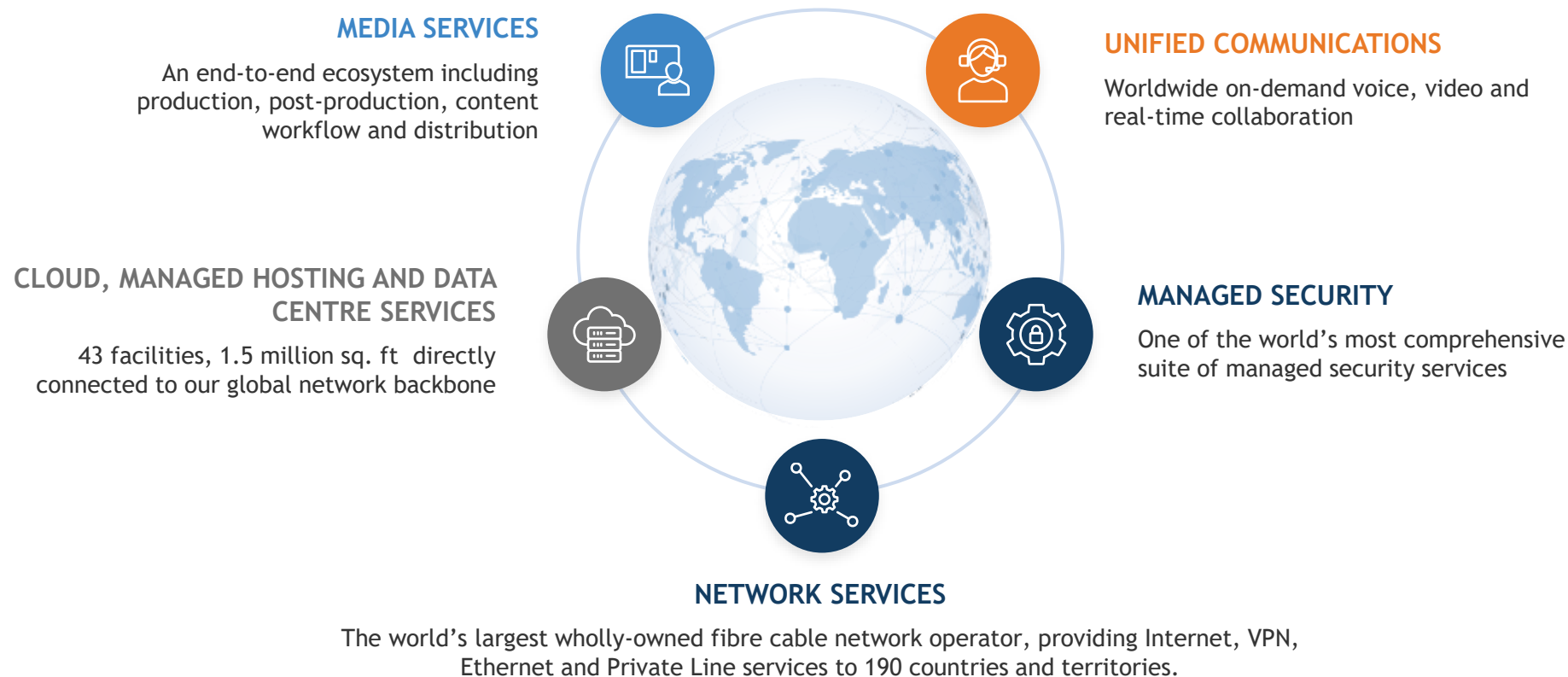


# MEDIA & ENTERTAINMENT SERVICES

Tata Communications

# TATA COMMUNICATIONS - ABOUT US

THROUGH OUR GLOBAL NETWORK, WE PLAY A MAJOR ROLE IN THE EMERGENCE OF A NEW WORLD OF COMMUNICATIONS



Our customers can reach  
**99.7%** of the global GDP  
using our network & services



Over **30%** of the world's  
internet routes use our  
network



We connect **4** out of **5**  
global mobile subscribers

# OUR MEDIA ECOSYSTEM: ONE SOLUTION FOR ALL YOUR MEDIA NEEDS

## GLOBAL MEDIA NETWORK



### VIDEO CONNECT

A fibre-based global media transport network to over 300 media hotspots across 125 cities supporting broadcast quality real time video



### SATELLITE TELEPORT

Uplink and down-link satellite teleport services, seamlessly integrated with our global fiber and content delivery networks



### ULTRA-LIVE VDN & CDN

A Low Latency synchronous streaming network that rivals the experience and quality of traditional broadcast

**As a managed, scalable, networked service -  
for occasional or permanent use**

## MEDIA TRANSFORMATION AND INFRASTRUCTURE



### MEDIA ASSET MANAGEMENT

A full suite of cloud-based solutions that enables asset management, review and approval, workflow automation



### STORAGE & COMPUTE

Our centralised cloud storage solution with zero egress or retrieval fees, which can be customised for your cloud needs



### MEDIA HUB SUPPLY CHAIN

Our Media Hub supply chain enables managed transcoding for OTT platforms, live publishing to social media, live record and capture on our network

**Leveraging our strengths: Hybrid Cloud and Data Centre  
solutions and strategic software partnerships**

# TRANSFORMING THE LIVE MEDIA INDUSTRY ONE EVENT AT A TIME

Our infrastructure spans the world to allow end-to-end programme delivery at any scale.  
We promise consistency, reliability and speed of content dispersal through our core products.

## LIVE EVENT SERVICES



Manage distribution for  
**800+**  
television channels  
across US, Europe & Asia



**5000+** live events  
delivered, over **750**  
remotely produced



**2400**  
Support hours annually  
across 25 team members



**3698+ TB**  
of content transfer  
approx. 786,808 standard DVDs

## PATHBREAKING PROOFS-OF-CONCEPT

2014

First ever **Live 4K stream** trial for a race between Singapore and UK



2015

First ever **Live OTT stream** with zero lag compared to linear broadcast



2016

World's first end-to-end test in **Live UHD** for a race with SKY UK



2017

World's first truly live **360° video** streamed from a race



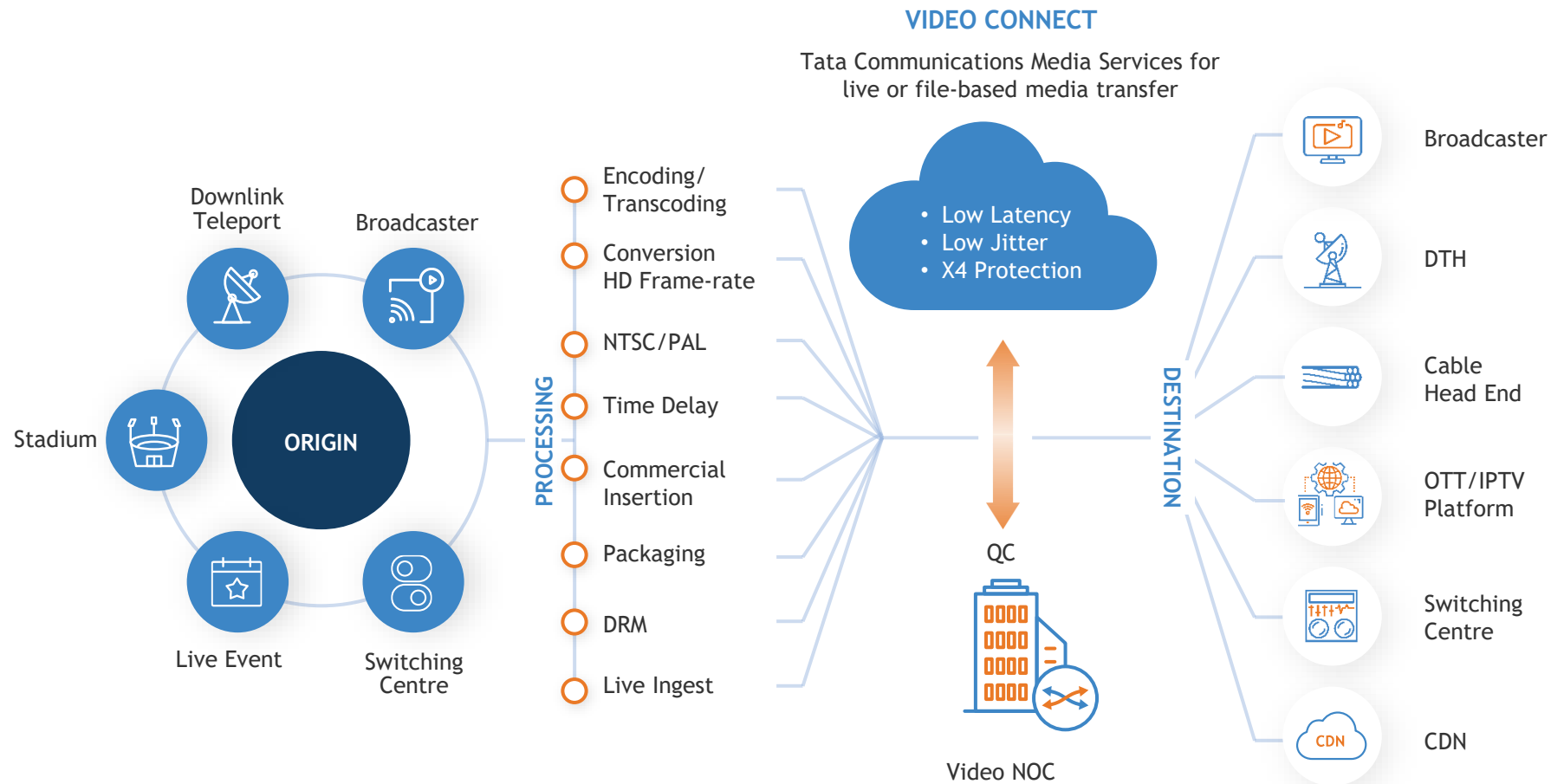
2018

World's first **Live 8K video** stream from a European Tour event in UK

## KEY CUSTOMERS



# AN END-TO-END NETWORK FOR VIDEO CONTRIBUTION & DISTRIBUTION



## ADDITIONAL APPLICATIONS

High throughput, bidirectional connectivity could be used for the following additional applications



News content exchange



Distribution of syndicated content



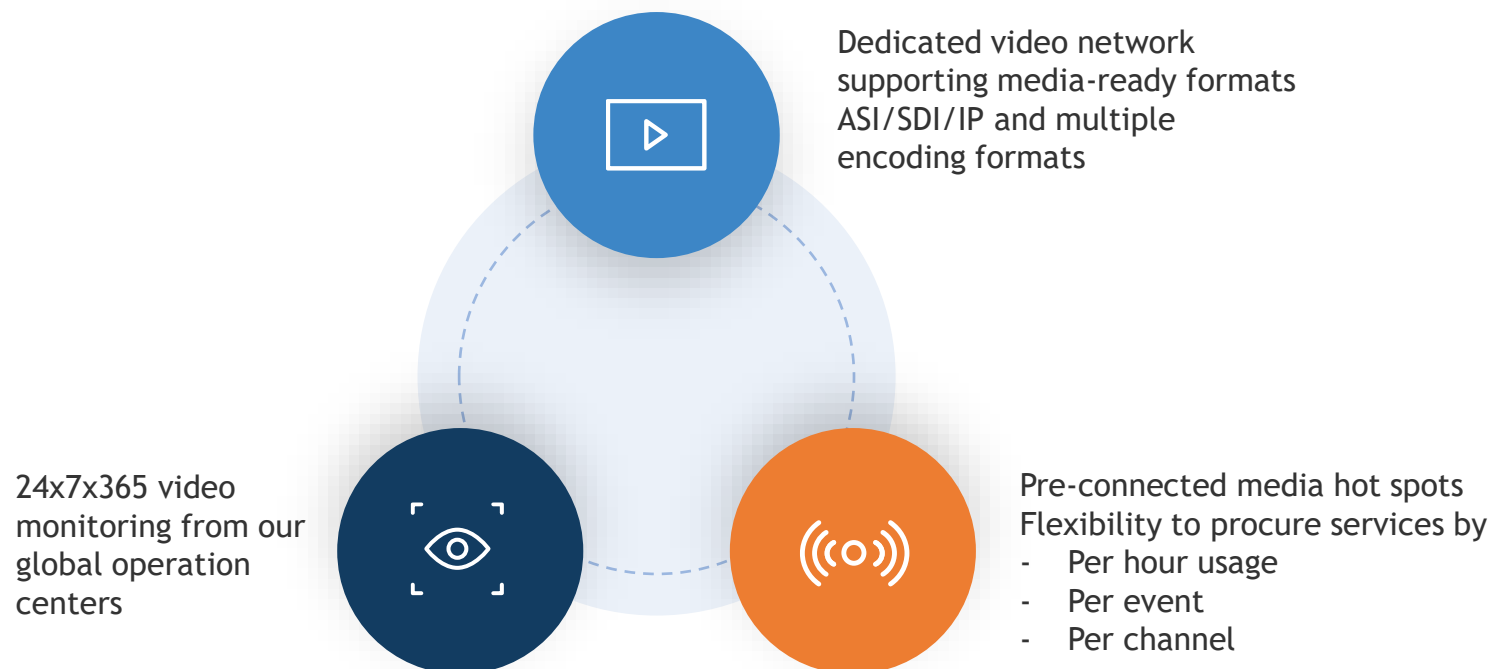
Local affiliate feeds to OTT platforms



Regionalisation of national feeds, insertion of local ads

# A TERRESTRIAL NETWORK BUILT FOR MEDIA

VIDEO CONNECT - A DEDICATED FIBRE-BASED BACKBONE FOR VIDEO CONTRIBUTION AND DISTRIBUTION



- End-to-end managed video network
- With global reach up to 300 key media hotspots
- Available on dedicated or on-demand basis
- With 24x7x365 monitoring and robust SLAs
- Fully customised and flexible service

*Enables seamless and assured delivery of video content for broadcasters, events, studios and production houses.*



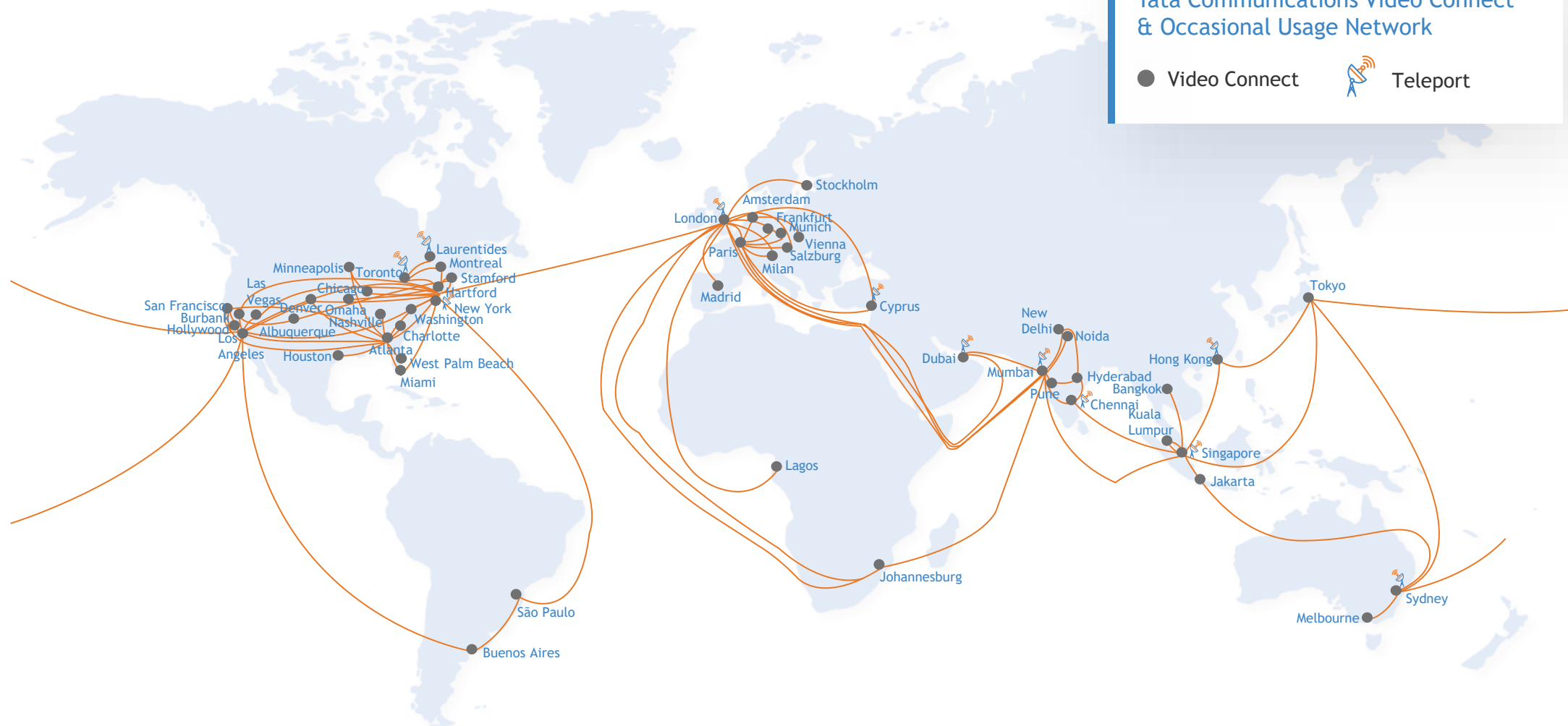
# GLOBAL NETWORK MAP

Tata Communications Video Connect  
& Occasional Usage Network

● Video Connect



Teleport



# EXTENDING LAST-MILE REACH THROUGH PUBLIC INTERNET

**VIDEO CONNECT PLUS** - A FULLY MANAGED SERVICE BACKED BY SLAS TO DELIVER HIGH QUALITY AND RELIABLE DELIVERY OF COMPRESSED VIDEO SERVICES OVER A HYBRID FIBRE/INTERNET NETWORK



Leverages our global private network, Video Connect in the core + public internet for only first and/or last mile



**Compatible with Zixi, SRT and RIST protocols** → flexible solutions leveraging popular yet proprietary mechanisms as well as standards-based approaches



Reaches wherever there is public internet!



Feeds at **ultra-low latency** in sync with satellite



Potential **cost efficiencies** over traditional broadcast methods



**ASI/IP/SDI Hand-off**



**Web-based Stream Manager GUI** with individual user-controlled access for switching, routing & distribution of feeds



**24/7/365 monitoring support** from our experienced video management remote crew



**Plug & Play** - Simple to set-up and operate



# VIDEO CONTENT DELIVERY NETWORK

A robust Video CDN platform that delivers LIVE and VOD content efficiently to end consumers, Tata Communications offers an end-to-end platform to support Content Ingestion, Transcoding, Transmuxing and Distribution of video content.

## FEATURES



**Network Predictability:** Our Tier-I ISP network is built on a global sub-sea cable structure that provides for alternate routes resulting in a high level of predictability.



**Reliable Content Delivery:** Highly reliable content delivery with an efficient CDN distribution of 30 Super Nodes riding on a Tier-I ISP & Hyper-Neural peering.



**Infrastructure Optimisation:** Optimise your infrastructure scale thanks to our CDN infrastructure's progressive caching capability at multiple tiers that enable higher offload.



**Regional Penetration:** Our partnerships with local ISPs across the globe, guarantees seamless, fast delivery of quality content across geographies.

## INTEGRATIONS



### Video on Demand

Deliver high-quality video from multiple sources with instant start-up time and near-zero buffering to your users across multiple platforms.



### Transcoding

Transcode your original files with our efficient transcoding services to align with varying bit rates and formats, supporting the whole gamut of end-user devices.



### Satellite Downlinking

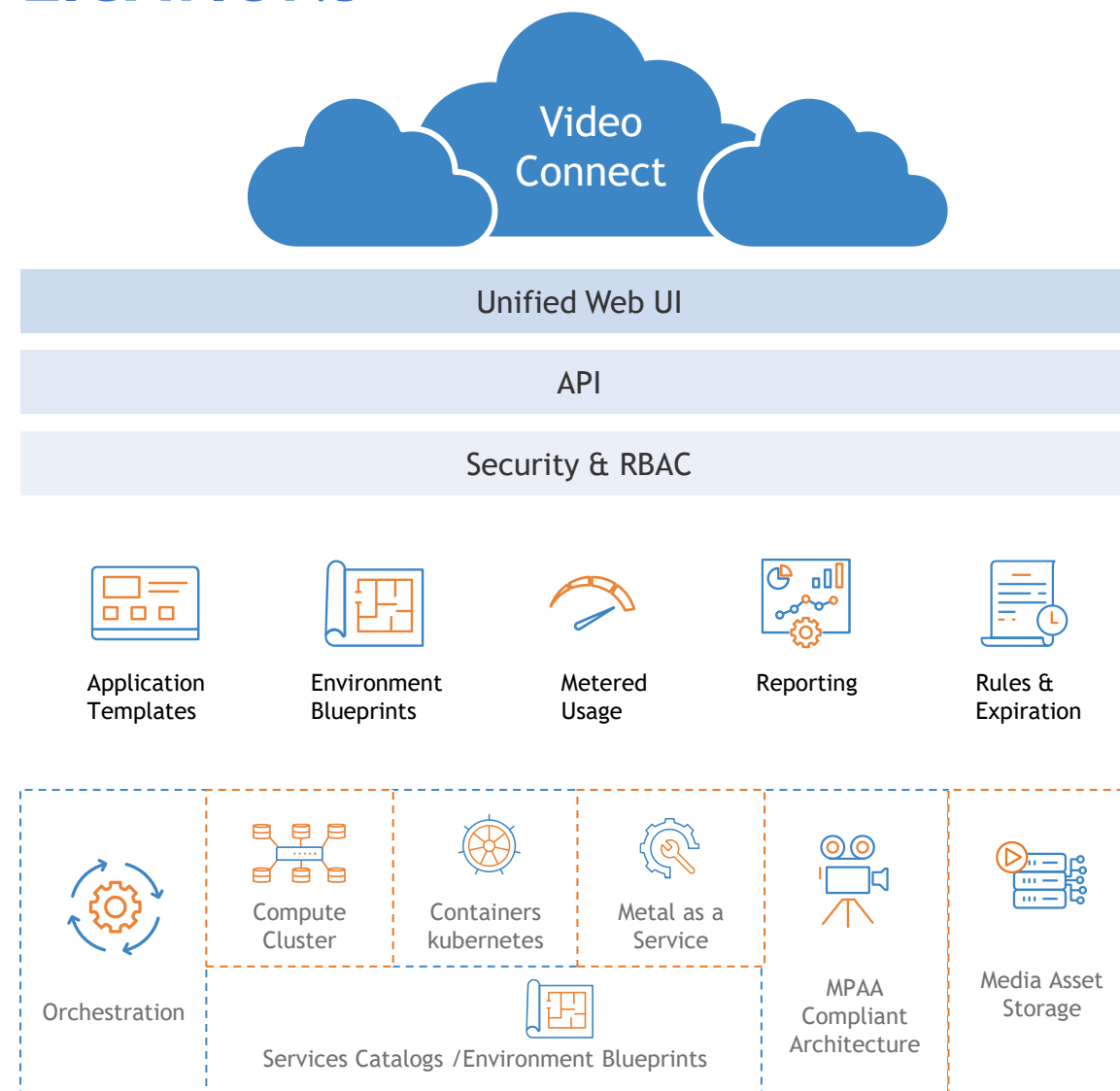
Get the edge in video content delivery with efficient delivery of live, linear channels enabled by one of India's largest antenna farms and high-end.

# A CLOUD OPTIMISED FOR MEDIA APPLICATIONS

Our Media Cloud Infrastructure-as-a-Service (IaaS) allows you the flexibility and security to create, edit and store workflows for customised content applications.

## FEATURES

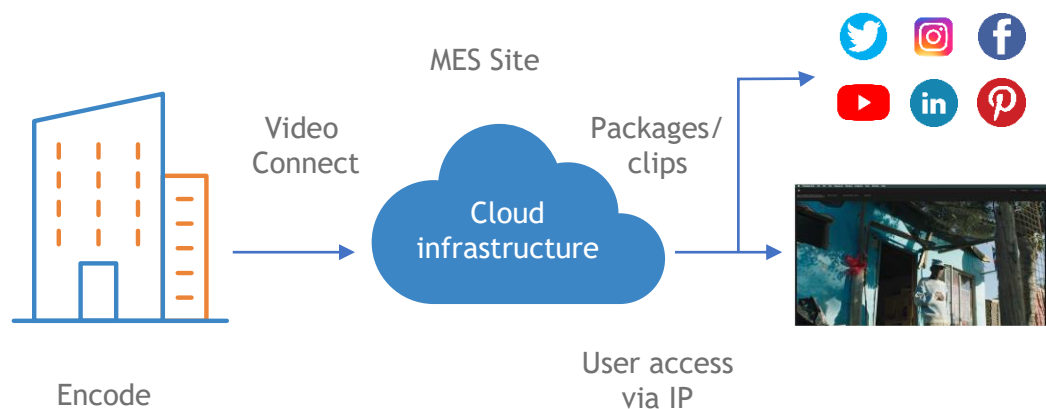
- Single control layer accessed via UI or API
- A Global storage service with capability to deliver 11 9's of Durability
- OpenStack Swift Object Storage Architecture designed for private and hybrid cloud media-centric applications with No Ingest/Egress/Retrieval fees
- Deploy multiple media applications from a service catalogue or as a fully 'blueprinted' workflow
- Decommission applications or full workflows with the same level of control and automation
- Rich reporting capabilities with show back and usage data
- Full life-cycle management with alerts or expiration rules



# ACHIEVE FULL FUNCTIONALITY OF YOUR VIDEO EDITING DESK THROUGH A REMOTELY-ACCESSIBLE WEB-BASED PLATFORM

## SOLUTION

### Cloud Live Editing solution



## OVERVIEW & BENEFITS

Our cloud-based live editing platform enables secure, lightning-fast, web-based, frame-accurate editing at up to 60 frames per second within a web browser, and distribution of video content by anyone, anytime, anywhere on any device using bandwidth as low as 2Mbps.

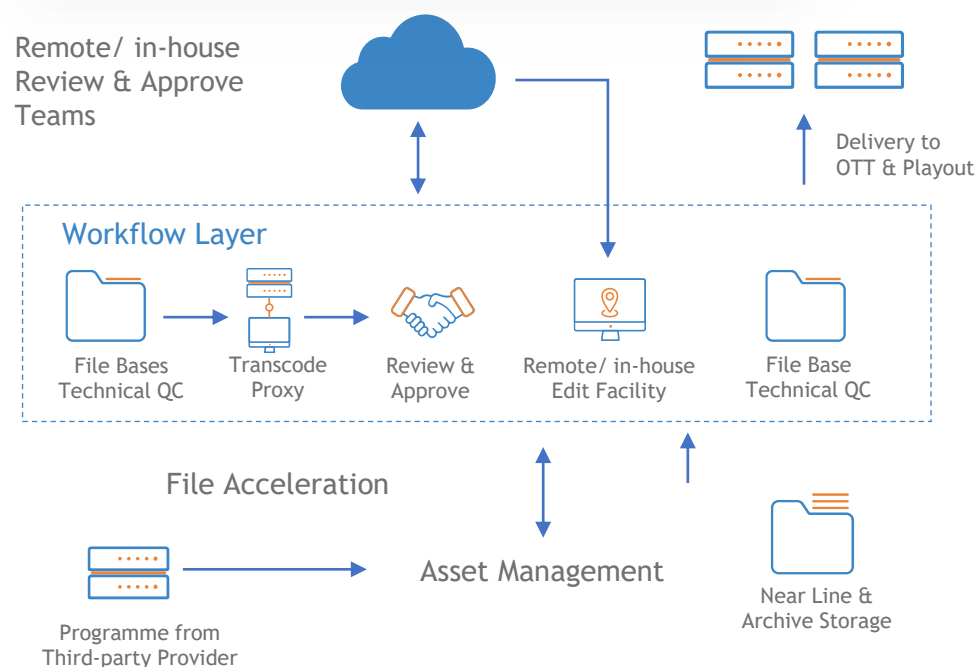
This solution has been tightly integrated with both our Video Connect network and Media Ecosystem Infrastructure, which means that any video feed that resides on Video Connect and any file that exists within our infrastructure can now be edited in real-time in a web browser environment.

- Boost productivity by enabling your video editing workflows in the cloud, ensuring you never have to transfer video between workstations again.
- View and edit content frame accurately, only six seconds after live, using bandwidth as low as 2Mbps per second.
- Monetize your content by being first to market by publishing it to social media, with inherent integrations with Facebook, YouTube, Twitch and more.
- Deliver CapEx savings by working on the cloud and eliminating editing hardware.

# MANAGE CUSTOMISED CONTENT FEEDBACK STREAMS IN A SEAMLESS CLOUD-BASED “REVIEW & APPROVE” APPLICATION

## SOLUTION

### MediaHub Review and Approve



## OVERVIEW & BENEFITS

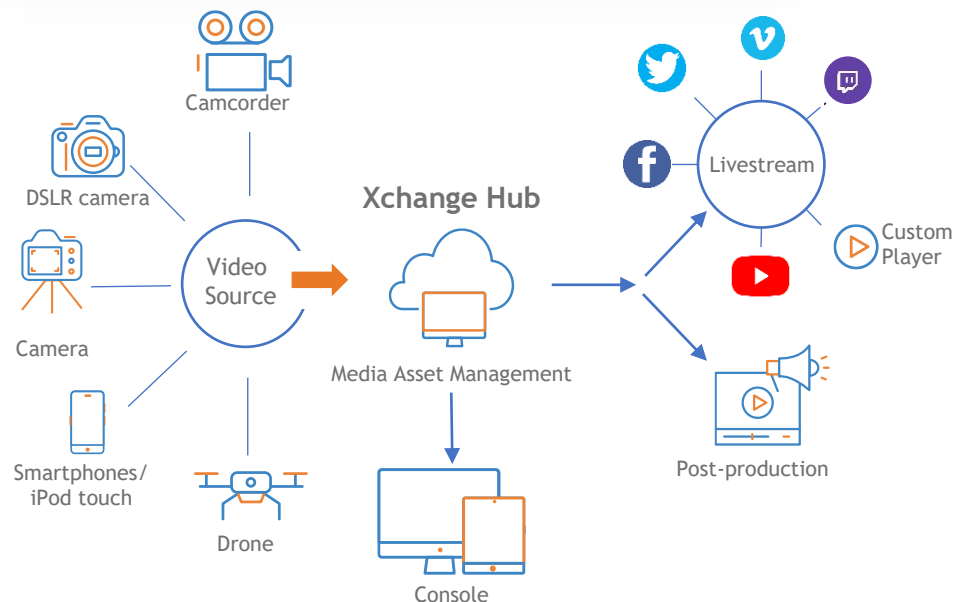
Tata Communications understands that team feedback is crucial to manage a video production chain, which is why we offer a unified solution for video review and approve workflows within a cloud environment, enabling your teams to collaborate from anywhere.

- Manage your video workflows remotely with a solution that comprises of accelerated file ingest and MediaHub Review and Approve.
- Easily configurable so it can match your specific team structure and video workflows.
- Easily integrated with automated workflows for file delivery, video transformation and video transcoding - final videos can be moved to customer sites, as well as packaged for OTT platforms.
- Live to VOD workflows and File Acceleration is natively supported within MediaHub to assist in all types of dynamic workflows.

# INGEST, STORE, TRANSFORM AND DELIVER YOUR CONTENT THROUGH A UNIFIED MEDIA ASSET MANAGEMENT PLATFORM

## SOLUTION

### Media Xchange Hub



## OVERVIEW & BENEFITS

Tata Communications can offer full end-to-end production Media Asset Management, including hosting, infrastructure, storage, accelerated file ingest and network.

Content owners can now manage their entire media content library with Xchange Hub, a web-based platform that offers single and multi-site operations global access to their content and workflows. Combined with both Tata Communications' media-optimised storage and Tata Communications' Video Connect, file-based and live workflows can be managed seamlessly - from wherever you are in the world.

- Xchange Hub supports the entire media lifecycle and seamlessly connects teams with workflows that enhance video production, file-sharing, editing and publishing.
- All production assets and associated metadata can be accessed from a single, unified UI - with powerful search capabilities and real-time playback.
- Xchange Hub is tightly integrated with Tata Communications' Media-optimised storage, which means whilst providing 11 9's of durability with no ingest, egress or retrieval fees - customised storage layers can be created across multiple regions.

## LIVE EVENT SERVICES

Apart from enabling remote and virtualized production operations, our experienced media services team can deliver end-to-end event IT and Broadcast management services.

World-class live events.  
Tight turnaround times.  
Uncompromised service levels.



Occasional Usage (OU) services



Media Services Operations Centres (MSOC)



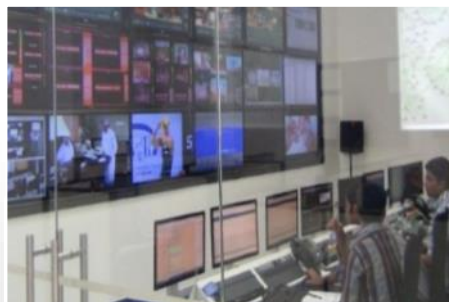
# MEDIA SERVICE OPERATIONS CENTRES (MSOC)



## LONDON NOC

(UK MCR)

- Primary NOC for LIVE Special Events
- DR NOC for Video Connect Services
- Dynamic Resource Availability according to event



## CHENNAI NOC

- Primary NOC for BS & Media Eco System Services
- DR for Video Connect
- Downlink turnaround services



## PUNE NOC

- Primary NOC for Video Connect
- DR for Broadcast Services & Media Eco System Services

## 24x7 State-of-the-Art media service operation centre for service assurance

- End-to-End Management with qualified video engineers
- Integrate any device or system
- Reporting
- Scheduling
- Web and Mobile access
- Performance Management

## Unified Service Delivery & Service Assurance Process

- Edge Device remote configuration from centralized Media Operations Center
- Performance Monitoring of Streams w.r.t to TR101 analysis and errors.
- Failover switching if available and proposed
- Spare and Inventory Management for CPEs
- Immediate field engineer dispatch
- Dedicated support for self service setup
- Vendor Management for 3<sup>rd</sup> party and support

- 24x7 Support
- Toll-Free Number from Multiple Countries
- Fully equipped with all essential Network, Video & Audio Monitoring facilities

# THE TATA COMMUNICATIONS ADVANTAGE



## TECHNOLOGY SYNERGY

Seamless integration of multiple delivery technologies unlocks tremendous global distribution synergies, and reduces vendor-management time and effort



## CUSTOMISED SLAs WITHIN A MASTER CONTRACT

Single contract reduces deployment time and legal hassles + each service comes with customised SLA options



## PAINLESS SWITCHOVER

Full compatibility and interoperability of our solutions with industry-leading standards, protocols and equipment for a flexible and seamless transition.



## ON-NET BROADCAST HUB ECOSYSTEM

A large global ecosystem of 400+ on-net broadcasters on our Video Connect network ensures an uninterrupted connection to your fans.



## DEDICATED SUPPORT

A fully managed service backed by our Media Service Operations Centres provides 24/7/365 monitoring through a single pane of glass.



## EXCEPTIONAL TURNAROUND

End-to-end design to delivery of solution in mere weeks from signing of contract

# TATA COMMUNICATIONS: A PARTNER OF CHOICE FOR THE INDUSTRY LEADERS

**60%**

Cloud giants connected through us to business

**#1**

International wholesale voice provider submarine cable owner on-net mobile signal (globally)

**4 of 5**

Global mobile subscribers connected through our network

**#1**

Enterprise data and colocation services in India

**30%**

Global internet routes carried by us



Amongst the **fastest growing** global Tier-1 ISPs

**#1**

on-net mobile signaling

**#5**

Global wholesale IP provider

## INDUSTRY RECOGNITION

**Gartner**

Positioned as a 'Leader' in the 2020 Gartner Magic Quadrant for Network Services for the seventh year in a row

**F R O S T & S U L L I V A N**

Managed Video Services Company of the Year by Frost & Sullivan at the India ICT Awards 2019 & 2020

**OMDIA**

Positioned as a 'Leader' in the 2020 Video CDN Market Landscape report by Omdia.

# Thank you!

tatacommunications.com

## Global Media Network

- Video Connect
- Ultra-Live VDN

## Media Cloud Infrastructure

- Cloud Storage & Compute
- Media Hub Supply Chain

## Live Event Services

- Remote Production
- OU Services

## MEDIA SERVICES