THE FULLY VIRTUALIZED NETWORK – BUILT FOR CLOUD

SOLUTIONS BRIEF

DEPLOYING A DISTRIBUTED ACCESS ARCHITECTURE FOR SERVICE PROVIDER EXCELLENCE

As an ever-demanding subscriber base consumes bandwidth on a colossal scale, Vodafone is meeting the challenges head-on. Your determination to lead the way in building a fully scalable, cloud native architecture that can deliver quality video streaming, OTT and high-speed broadband services – all while minimising investment in non-standard hardware and power – is truly pioneering.

Vodafone's Project Ocean's vision of a cloud native future built around a Distributed Access Architecture is the biggest global transformation project the industry has seen.

The future is cloud native

ARRIS's approach to addressing these challenges is closely aligned with your own. In the current trend towards moving management and orchestration to the virtualized cloud, ARRIS is leading the charge from the front.

Built from the ground up, our tried and tested network management solutions that have led the industry have now been completely rearchitected and optimised for cloud environments. This delivers a powerful proposition – a distributed, unified network, architected to offer the highest levels of flexibility, availability and resiliency. Our unique approach to design, automation and intelligence, zero touch provisioning, service creation based on policy and software-defined approaches offer Vodafone a host of opportunities to explore new models for existing and new markets.

Our innovative DAA solutions include Remote PHY (R-PHY) and Remote MACPHY (R-MACPHY). We're also developing technologies to support symmetric services such as Full Duplex DOCSIS 3.1 (FDX) and those that extend the life of HFC, such as Extended Spectrum DOCSIS. What's more, with an eye always on the future, we'll continue to drive the potential for a fully self-healing and self-optimising network.

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VODAFONE AND ARRIS – THE NEXT CHAPTER IN OUR PARTNERSHIP

With our understanding of Vodafone's extensive global network – and the scale and resources to match your own, we can offer unparalleled support for the evolution of your current installed base to a virtual architecture. Our solutions bring together all the benefits of our extensive heritage in bespoke network management hardware and our true-cloud values of automation and integration.

Open standards, open to the future

ARRIS is deeply committed to driving the open standards that enable and integrate multiple vendor solutions in a virtualized distributed network architecture. As the only vendor actively participating in the Flexible MAC Architecture (FMA) standards board and a key contributor to the CableLabs evolving standards, ARRIS is at the forefront of FDX developments and field trials.
What's more, ARRIS DAA solutions are being actively deployed within multiple customer production environments.

In short, we're continuing to raise the bar for interoperability, working with other industry players to foster collaboration in a multi-vendor environment.

A future-ready architecture in your hands

ARRIS's DAA solutions are built to deliver the qualities you depend on in your architecture: convergence, performance, speed, security and reliability.

Convergence

Our leadership in the cable access domain and experience in CMTS/CCAP, virtualization and DAA bring a unique combination of expertise and talents – making us ideally placed to support Vodafone in your ongoing convergence goals.

Performance

Our innovations in the fields of virtualization, automation and network intelligence mean we're fully aligned with Vodafone's strategic goals. We understand Vodafone's need for an evolutionary approach, and can offer Vodafone some unique opportunities in how you deploy and implement that transformation.

We're currently developing future-proof solutions that fully leverage our heritage in access technologies, providing powerfully innovative orchestration solutions whilst safeguarding your operational integrity and investment protection along the way.

Service speeds

Leveraging open standards and open source principles alongside a domain expertise orchestration layer – we can deliver Vodafone's vision of virtualized cloud CO architecture while continuing to push service speeds to new heights.

Security and reliability

Architected to offer the highest levels of availability and resiliency, our single, converged management solution empowers you to react faster, provision new services and product updates wherever and whenever you need them, and support capacity on demand – building a flexible, more agile network that will deliver the services you need.

AN IN-DEPTH LOOK AT THE ARRIS CLOUD NATIVE ARCHITECTURE

As part of the drive towards the ideal of a DAA, ARRIS has virtualized the network core itself – our E6000 CCAP platform. Along with other key players we're developing a new cloud native model to run on commercial off-the-shelf (COTS) compute hardware as a virtualized network function (VNF) core. We call this broadband service virtualization 'vCore'.

Integrating vCore alongside ARRIS VUE for video edge and core virtualization, and ARRIS vManager for complete orchestration of these distributed elements, ARRIS is making the cloud native DAA a powerful proposition for higher bandwidth speeds and services.

ARRIS vCORE
Virtualized Data Core

ARRIS vCore leverages proven CCAP hardware and software elements, the field experience of extensive E6000 deployments, and our extensive SQA testing infrastructure developed over 15 years to deliver stable and scalable DOCSIS solutions to MSOs. On top of this existing expertise we bring our cloud native innovation to develop truly feature rich, born-in-the-cloud capabilities.

- Stable, reliable, compliant software built from existing E6000 and CCAP Core
- Integrates with both ARRIS vManager and other third party orchestration tools through open APIs support
- Higher level orchestration complements our Cable Access Edge domain expertise
- Software-only, COTS-based deployment drives cost efficiencies
- NFV Architecture supports industry-leading cloud tools such as Docker, Kubernetes and more

ARRIS VUE
Virtualized Video Core for DAA
and IP Video Convergence

ARRIS Video Unified Edge (VUE) is a suite of modular software functions designed to virtualize the legacy video headend network within Vodafone's cloud environment. ARRIS VUE simplifies and replaces traditional video processing appliances, automating configuration and improving uptime. In a DAA, the VUE functions as a video core, supporting both the video data and video control planes.

Another feature of VUE is that it enables new revenue-generating opportunities through ad insertion.

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ARRIS vMANAGER

Virtualized 'Domain Orchestrator' for Cable Access, DAA & beyond

ARRIS vManager cloud native software was created to monitor and orchestrate the cable access network for DAA architectures and beyond. Providing intelligent automation tools and open source compatibility for higher-level integration, vManager simplifies network operations and improves performance, by deploying a series of container-based micro-services.

ARRIS has worked closely with ADTRAN to ensure full compatibility and interoperability with ADTRAN's Mosaic network orchestration tools and multiple access edge networks.

FLEXIBLE: Full flexibility of virtualized network orchestration across different access edge infrastructures (cable, telco GPON/PON/DSL, 4G/5G, CBRS, etc).

CONVERGED: Single orchestration solution for every type of network, from back office to services, for complete 'cable and telco unite'.

SELF-HEALING: Allows creation of automated repair and debug procedures, to help prevent outages and reduce truck rolls.

SELF-SERVICE: Subscriber-controlled click-through speeds up service provisioning, allows users to self-configure new networks and add new cable services and channels across different platforms.

ON DEMAND: Users can provision new services and add or remove network capacity according to their needs.

WHY ARRIS? WE'RE ALIGNED WITH YOUR VISION

Combining more than 35 years of pioneering global services delivery with 15 years of cloud-centric network design, ARRIS is continuing to deliver carrier-class resiliency with born-in-the-cloud innovation. As we guide clients in their transition to DAA, we continue to support security, performance and scale alongside network elasticity – building a future-proof platform that can offer the service speeds and availability needed in today's fast-changing world.

Industry trends in CMTS, CCAP, convergence and now, virtualization, cloud native design and DAA, have defined the very DNAof ARRIS. It's why we continue to evolve and innovate at the forefront of technology developments.

Our virtualized architecture offering is extensive and complete. Leveraging all our combined heritage, it's also based on our industry-leading, proven CCAP and R-PHY deployments.

The established leader in the Cable Access domain, and long-term Vodafone partner, ARRIS brings unparalleled expertise, leading the way to true transformation in an ever-evolving landscape. Our rich experience and open, agile approach deliver the support you need to build a single, end-to-end, cloud-based architecture. One that will integrate, orchestrate and automate your fixed-line, cable and wireless infrastructures.

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TALK TO US

Learn more about how we can help Vodafone go beyond virtualization – to build a truly cloud native environment.

**email: Vodafone@arris.com
visit arris.com to learn more**

REDEFINING CONNECTIVITY