

qualmon – Video Quality Monitor Demo

Since joining the Qosmos Expert Developers program, Argon Design has developed an example application to enable network providers to analyse the delivery and quality of video content being transmitted across their network, whilst it is being viewed. This will allow policy management and enforcement, which will also be an essential strand of Long Term Evolution (LTE).

Why?

There has been an explosion of video traffic across both fixed and mobile networks. Customers are using video in many forms, consuming increasing levels of bandwidth; service providers need the ability to tune their networks effectively to ensure sufficient bandwidth. This will still be applicable as LTE services are rolled out.

To do this they need to identify the form of video in use and manage the use case, is it a videoconference, live broadcast or a clip being downloaded to view later? All this needs to be done fast enough to enable service providers to maximise the available bandwidth and avoid ruining the experience for their customers. It will also enable network operators to control the Policy Charging Enforcement Function, an essential part of next generation networks.

How?

Argon Design have taken the Qosmos ixEngine Deep Packet Inspection (DPI) and Network Intelligence Software Development Kit and developed an application to identify, extract and analyse video content in a network stream. The demo application has been prepared to review both the quality of service to the customer and measure the video's "visual quality":

Quality of Service/Experience

- recognise & extract details of video streams,
- extract a representative thumbnail,
- recognise the player & replicate its buffering model,
- display the buffer margin as a time graph,
- predict video freeze when the player is starved of data.

Visual Quality

- decode the video,
- perform image processing to assess the visual quality and provide a numeric quality measure.

Hardware

For the qualmon demo, Argon Design uses a PC to act as a video server that streams videos at different rates to simulate network constraints.

The PC is connected to a WiFi hub to emulate the wireless network; users access the server and stream videos on their mobile devices while a Tiler TILenCorePro PCIe card is used to perform DPI on the network stream.

The TILenCorePro PCIe Card extracts and analyses the video streams to provide details and create an identifying thumbnail, whilst calculating how much viewing time is buffered in the player and performing image quality analysis. The results are then served to a web page for viewing on the browser and updated as appropriate.

So What?

The demo is an indicator of Argon Design's extensive capabilities in Deep Packet Inspection, video encode/decode and complex video analysis on manycore platforms. This can be readily extended to meet specific client requirements.

For video, we can capture and analyse multiple streams in a wide range of formats.



How can we help you?

iPlayer

Helping you with product innovation and systems development

Argon Design has been established by like minded individuals with a record for [product innovation](#) and [programme delivery](#) across a range of market sectors, including; embedded systems, manycore & parallel processing systems, multimedia consumer products and semiconductor IP.

We provide all aspects of advanced [product design and development](#) for clients ranging from entrepreneurial start-ups to established multinational organisations. We are an exceptionally [focused engineering team](#) with extensive expertise in [solving difficult design](#) problems.

We design innovative solutions for businesses that need assistance to [develop complex systems](#) and products in time to meet their market needs. Argon Design takes a holistic approach to product design, working closely with our clients to deliver particularly [elegant and efficient](#) solutions.

Our highly skilled technical team is made up of multi-disciplined, talented engineers with a strong academic background, experienced in [efficient partitioning](#) between [software and hardware](#) and an [impressive track record](#) of both technical and commercial success.

Our aim is to [reduce time](#) to market, [risk](#) and development [costs](#) for our customers, whilst [delivering market leading solutions](#).

Focus Areas

Our focus is on high tech embedded systems; embedded multimedia and network intelligence.

We have specific expertise in using manycore/multicore & parallel processing solutions; video & stills imaging, video conferencing; deep packet inspection/network intelligence; mobile devices and semiconductor design.

Multicore, Manycore, GPU Embedded Design

Argon Design's engineering team is focused on "difficult to do" designs and the use of [innovative technologies](#) to address problems in high-performance [imaging & multimedia](#), signal and parallel processing.

We are working closely with several semiconductor vendors with [manycore/multicore/GPU](#) solutions to develop [bespoke solutions](#) for clients. Current projects include Video Conferencing, Network Intelligence solutions, Development Systems and DVB

Embedded Multimedia Design

Argon Design has many years experience in [mobile multimedia](#) design with a strong focus on high level [2D/3D graphics](#) performance and full [HD video encoding & decoding](#) for mobile devices. We also have extensive imaging experience for video and still [image capture](#).

Network Intelligence, DPI

Argon Design is a member of [Qosmos's QED Program](#) aimed at making it easier to embed their market leading Network Intelligence Technology to enable deep visibility into traffic flows.

Argon Design's technical team is particularly strong in multimedia applications and is working closely with Qosmos on enabling the ixEngine [DPI/Network Intelligence](#) software in [image/video analysis](#) and other applications, such as [mobile traffic optimisation](#).

So What?

Argon Design's engineering team can help develop bespoke solutions for clients who are looking to take the next step into Multicore/Manycore design, but do not have the available in-house resource to proceed.



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