Q. Network architecture

a) Provide two diagrams: the first one describing how content (e.g. a TV show) is delivered to a Bell Fibe TV subscriber and the second one describing how content (e.g. a TV show) is delivered to a Bell Mobility subscriber. The diagrams should detail all similarities and differences between these two services.

b) Please describe the overall network architecture from video source ingestion (live or recorded) to display on smartphone/tablet.

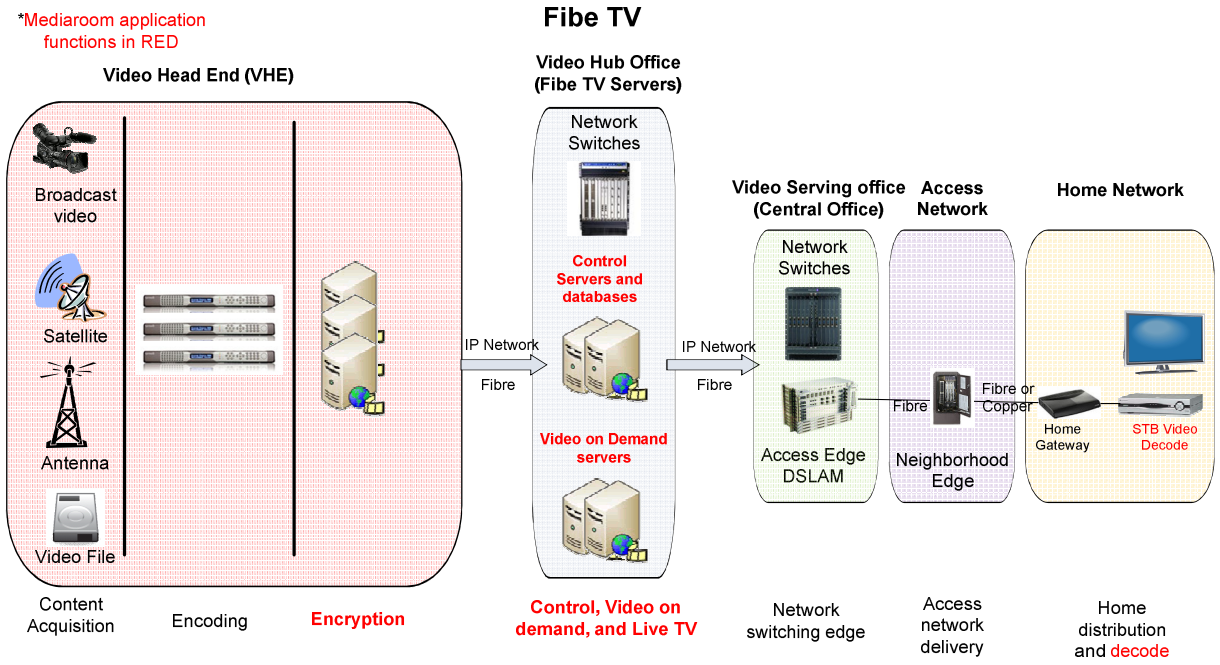
c) Is the Bell Mobile TV app content differentiated from any other Internet traffic on Bell's wireless network? If so, where on the network is it differentiated and separated?

d) Does Bell Mobile TV app content watched on a smartphone/tablet get a higher priority than other Internet content on Bell Mobility's wireless network? Are there any optimization or overload mechanisms in place to ensure a better quality of service? If so, please describe

A. a) and b)

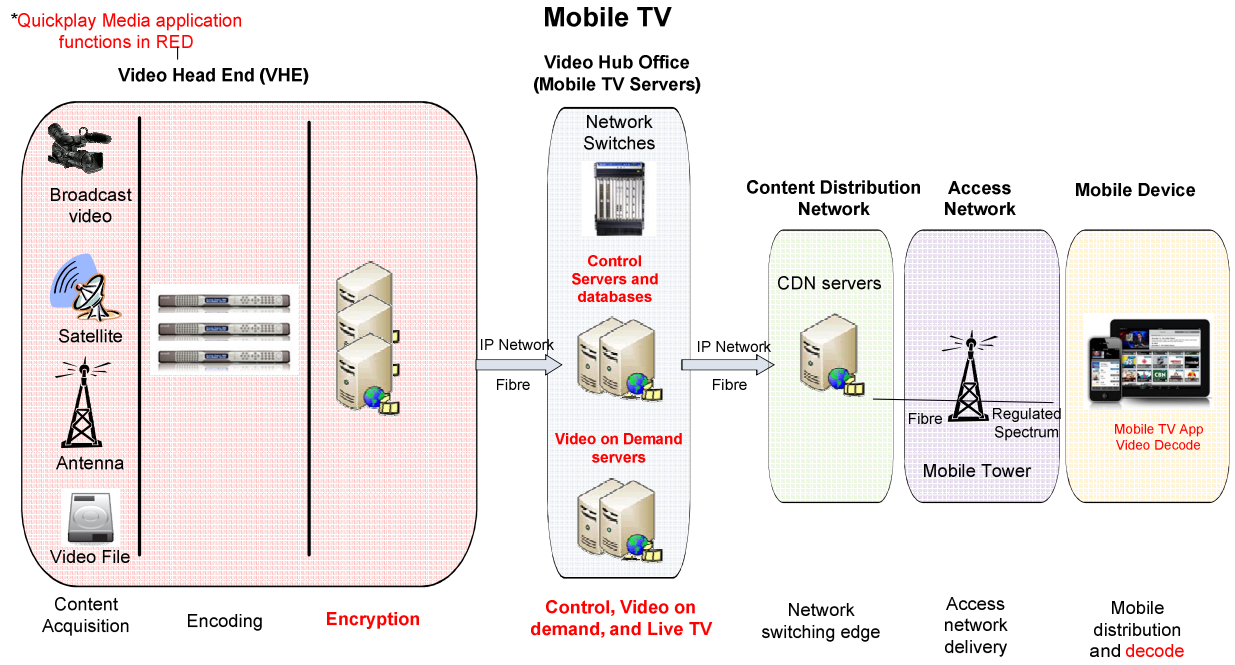
In order to provide Fibe TV, Bell Canada acquires content through various means including through live broadcast feeds, from satellite and from Over the Air (OTA) broadcast antennas all directly from the content providers. In some cases, the content owner will deliver video files directly to Bell by various means for services such as for On Demand services.

These various sources of content are aggregated, encrypted and sent to the Video Hub Office (i.e. the Fibe TV servers) which provide the intelligence of the Fibe TV service needed to, among other things, deliver the right channels to the right customers. Bell Canada currently leverages Ericsson Mediaroom as a platform for this intelligence. Content is then distributed to Central Offices (COs) at the edge of the network to network switches which can then multicast the content to users as needed (i.e. the Video Serving Office or VSO).



When a customer watches TV, that content is then sent through the access network, typically Fibre-to-the-Node or Fibre-to-the-Home infrastructure, from the CO to his or her set-top box.

For its part, Bell Mobility also acquires content for its Mobile TV service. Content is aggregated, encoded, encrypted and then sent to Bell Mobility's Mobile TV servers. Like the Fibe TV servers these provide the intelligence necessary to provide the right services to the right end-users however Bell Mobility leverages the QuickPlay Media platform, a Toronto-based company, rather than Ericsson MediaRoom. Up to this point, the services are nearly identical. After this, due to the nature of mobile wireless services, the delivery differs somewhat.



Rather than sending content to Bell Canada's COs, which may not necessarily be near the many towers and radio apparatus of Bell Mobility's network, the Mobile TV servers instead send the content to a content distribution network (CDN) which hosts the content as broadly as possible within the Bell Mobility core network. When a Mobile TV user chooses to watch a channel, that content is then distributed in a point-to-point connection between the CDN servers through the access network, which in this case would be a tower and wireless spectrum, up to the end-user device.

The exemption order for digital media broadcasting undertakings (DMBUs) set out in the appendix to Broadcasting Order CRTC 2012-409 states that, for the purposes of the exemption order:

> The undertaking provides broadcasting services, in accordance with the interpretation of "broadcasting" set out in *New Media*, Broadcasting Public Notice CRTC 1999-84/Telecom Public Notice CRTC 99-14, 17 May 1999, that are:

a) delivered and accessed over the Internet; **or**
b) delivered using point-to-point technology and received by way of mobile devices. [Emphasis added]

Accordingly the differentiating feature between a digital media broadcasting service that provides programming available via the Internet (e.g., an OTT service) and a mobile BDU service is the means of distribution.

OTT providers such as YouTube, Netflix or Bell-owned providers such as www.ctv.ca or www.tsn.ca are DMBUs and fall under the first means of distribution (broadcasting services delivered and accessed over the Internet). These OTT DMBU programmers do not arrange for the delivery to an end-user through a distribution undertaking but rather make their content available over the Internet. These programmers negotiate OTT distribution rights from content owners which reflect the delivery of the content over the Internet.

On the other hand, Bell Mobile TV is a mobile BDU which is also a DMBU but it falls under the second means of distribution (broadcast services delivered using point-to-point technology and received by way of mobile devices). Unlike an OTT provider Bell Mobile TV is a BDU which provides end-to-end service including through an access network just as a satellite relay distribution undertaking will make use of its satellite signals as its access network to deliver broadcast signals to an end-user and a terrestrial distribution undertaking will make use of its wireline access network to deliver broadcast signals to an end-user. Bell accordingly negotiates, as noted in Bell Mobility(CRTC)4Apr14-1 Klass separate distribution rights for mobile distribution of content with content owners.

In this regard we also note that there are Bell Mobility customers who do not subscribe to the Internet through a data package but do subscribe to Bell Mobile TV and make use of their TV service.

c) and d)

Unlike Fibe TV traffic which is currently prioritized in the network to ensure a better quality of service, Bell Mobile TV traffic is currently treated the same as other traffic in Bell Mobility's core and access networks. As a broadcast service the source of traffic is also different in that a customer that subscribes to Bell Mobile TV without a data package would not have access to the Internet but they could still have access to their TV just like a terrestrial BDU's TV customer that does not subscribe to an Internet service would have access to TV content but no Internet access.

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