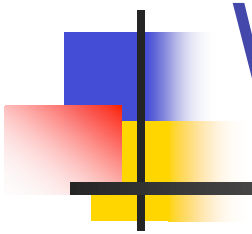

Well-managed Multicast

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2007/07/25

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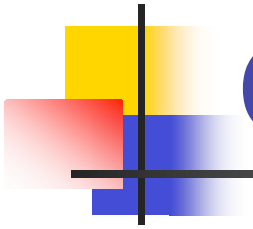
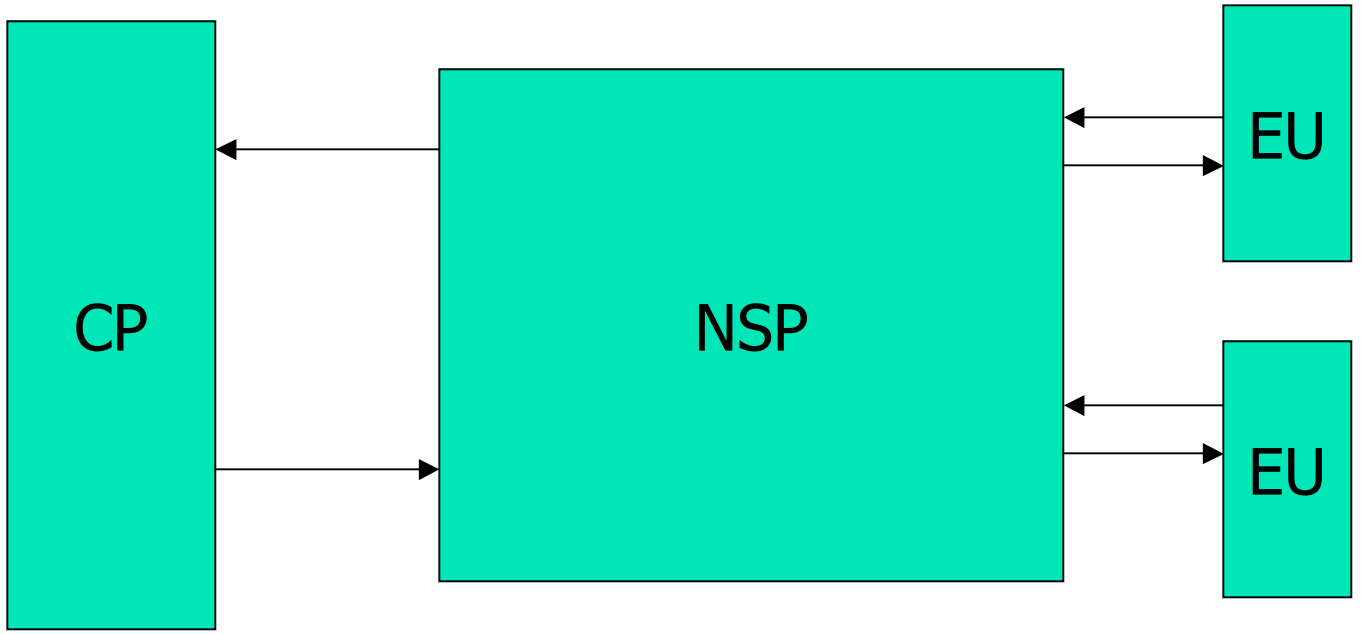


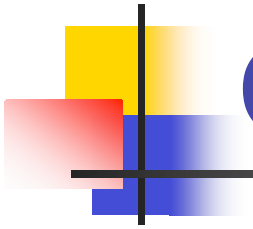
Overview

- This is work that has been underway since well before the Requirements and the AAA Framework documents were published.
- Basic observation is that the proposed work needs to be placed in a somewhat larger context.

AAA Framework

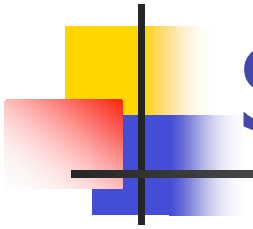
- From draft-ietf-mboned-multiaaa-framework





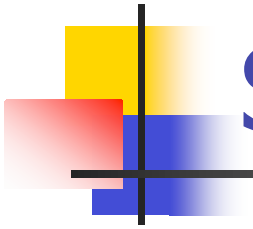
Commentary

- I-D discusses important issues
- Insides of the NSP box are subsequently expanded, especially for the case where QoS is important
- However, we believe that confining the interactions to EU <-> NSP and NSP <-> CP, is incomplete.



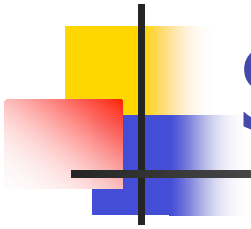
System Interactions

- CP often does not want to “market” his product.
- User is not used to buying movies or other multicast services from his NSP.
- CP is not an expert in authenticating, and often does not care about the details.
- This is an opportunity for the NSP.



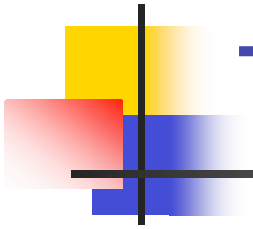
Sequence of Events (1)

- CP gives information on a new product to a Merchant (MR)
- EU negotiates with his Financial Institution (FI) for “electronic cash”
- EU “visits” the MR (web browser) to purchase product
- MR checks with FI to ensure invoice payment



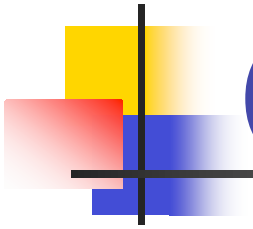
Sequence of Events (2)

- Token of some sort is supplied to EU (by MR)
- Policy is sent to NSP (by MR, or by CP)
- EU presents his token to NSP
- NSP validates against policy (NAS->AAAS)
- NSP delivers (multicast) stream to EU



The Opportunity

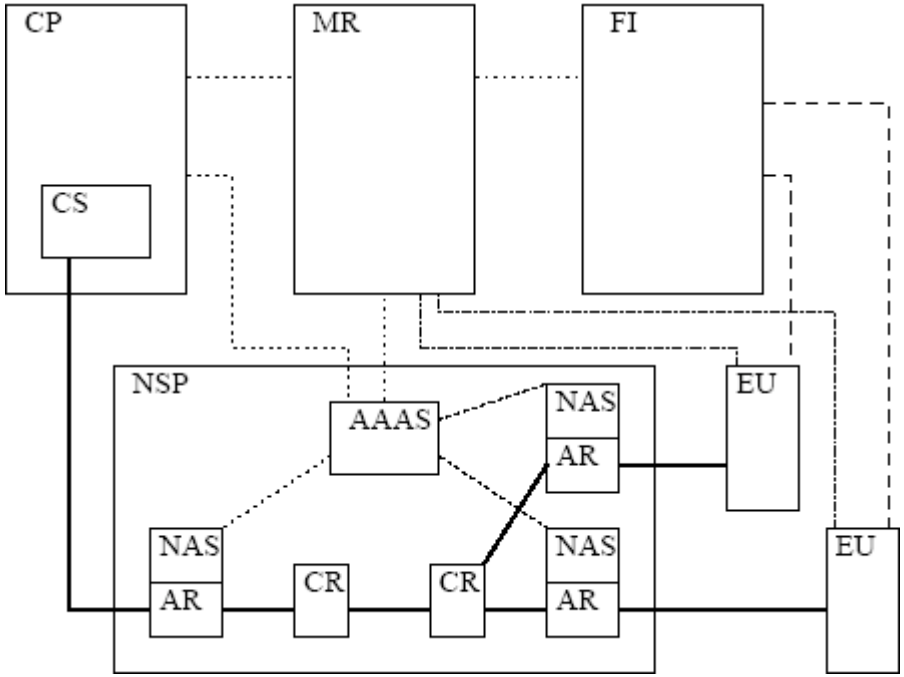
- Given that the CP is likely to be uninterested in the details
- Given that only the Access Routers are really in a position to be “points of control”
- The NSP has an opportunity to offer a new service:

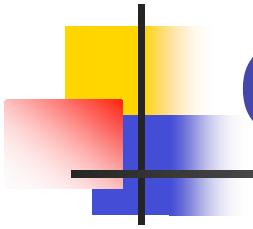


(2)

- Give me a policy for accepting clients, and I will deliver the data using multicast (saving you effort in sending)
- I will also arrange the collection of accounting information, which you can view later
- I may also deal with the FI on your behalf.

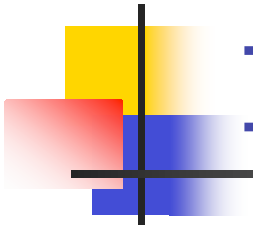
Our Architecture





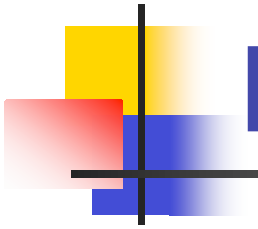
Caveat

- Clearly the IETF is not interested in standardizing all the e-commerce side of this
- However, I believe that we need to formulate the solution(s) in such a way that the *interface* with the e-commerce world is smooth



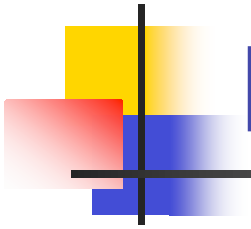
Implications for the I-D

- We need to formulate the problem in a way that isolates the CP (and the MR and the FI) from the details of the delivery.
- This implies a shift in the view of the NSP, from a bit-carrier to a provider of a more comprehensive service.
- It also implies a “policy database” co-located with the AAAS



Papers (1)

- J.W. Atwood, “An Architecture for Secure and Accountable Multicasting”, LCN 2007
- S. Islam and J.W. Atwood, “A Framework to Add AAA Functionalities in IP Multicast”, AICT 2006
- S. Islam and J.W. Atwood, “A Policy Framework for Multicast Group Control”, P2PM 2007
- S . Islam and J.W. Atwood, “The Internet Group Management Protocol with Access Control (IGMP-AC)”, LCN 2006
- S . Islam and J.W. Atwood, “Sender Access Control in IP Multicast”, LCN 2007
- S . Islam and J.W. Atwood, “End User Authentication, Authorization and Accounting in Multicasting”, in preparation
- S . Islam and J.W. Atwood, “User Access Control for Inter-Domain Multicast Groups”, in preparation



Papers(2)

- A.K. Venkataiahgari, J.W. Atwood and M. Debbabi, “Secure E-Commerce Transactions for Multicast Services”, SAM 2006
- A. K. Venkataiahgari, J.W. Atwood and M. Debbabi, “A Survey of Secure B2C Commerce for Multicast Services, CCECE 2006
- (Requests for copies will be welcome. mailto:bill@cse.concordia.ca)