Debate Contribution – Michael Geiger – Content-centric Networking (CCN)

With the content-centric networking (CCN) approach like the Named Data Networking (NDN), the content is addressed and routable. The content is defined by names instead of IP addresses, but uses a similar architecture like the IP, the hourglass architecture (Ding et al., 2016). The basic exchange of content occurs through the exchange of requests and responses.

A CCN approach offers more flexibility and scalability, better security and less data congestion. The improved flexibility comes from the fact that individual pieces of content are identified by names and not by IP addresses, while the higher security is achieved through the approach, that the individual pieces of content are protected instead of the transmission path (Jacobson et al., 2009). Also the named and protected information is stored in distributed caches, which leads to the fact, that traffic control has fewer hops and redundant requests are avoided, so the resource requirement is less.

References:

Ding, W., Yan, Z. & Deng, R. (2016) A Survey on Future Internet Security Architectures. IEEE Access. 4: 4374-7393. Available from: https://0-ieeexplore-ieee-org.serlib0.essex.ac.uk/document/7526334#IEEE [Accessed 13 February 2022].

Jacobson, V., Mosko, M., Smetters, D., & Garcia-Luna-Aceves, J. (2007). Content-centric networking. Whitepaper, Palo Alto Research Center, 2-4. Available from: http://bnrg.cs.berkeley.edu/~randy/Courses/CS294.S13/14.2b.pdf [Accessed 14 February 2022]