владельца аккаунта, – «эмбеддинг пользователя».

Эмбеддинг пользователя – это центроид отобранного для него (лидирующего) кластера. Строить центроиды можно множеством разных способов. После многочисленных экспериментов было принято решение использовать самый простой из них: усреднение входящих в кластер векторов. Как и кластеров, эмбеддингов у пользователя может быть несколько.

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SCALABLE CONTENT ROUTING SYSTEM FOR ICN NETWORKS

Information-Centric networks (ICN) is a future architecture that aims to cache content objects in the network nodes or routers and allow the access to these contents from any location by ensuring in-network storage for caching contents, decoupling the content from the host address. The decoupling between publisher and subscriber removes the role of IP address, which works only as an identifier, locator and enabling multiparty communication through replication. Various projects like DONA, NDN, PURSUIT, SAIL, COMET, CONVERGENCE, MobilityFirst, PSIRP, CBCB, NetInf, KBN presented proposals in the ICN field in order to suit the new

requirements including the effective distributions of contents [1]. Three ICN architectures (i.e. PURSUIT, SAIL, and Mobility First) use name resolution approach for their data routing. However, another three architectures (i.e. CBCB, NDN, and CONET) use name-based data routing [1].

There are a number of challenges exists on the way of ICN architectures regarding the name resolution and data routing. The challenges include ensuring delivery of required content, detection of the nearest copy of required content, scalability, excessive current on routing tables, single point for failure, and finally, security and filtering. As a result, we propose a new routing scheme in this field - semantic routing scheme for ICN (SICN) [2].

To design the new network architecture (SICN), a closer look for the types of data communication that should be taken into consideration. In this manner, we classify data transmission into four types based on the number of subscriptions and frequency of use of the data object (table 1).

Another problem that resides in the proposed ICN schemes is the limitation to deal with knowledge searching.

Our ICN works on Publisher/Subscriber technique. The publisher sends message include structure naming, and the subscriber sends message with his interest. The publisher has broker that transforms the informal language into formal and construct the naming then send it to the network. The network, in its turn, then makes routing according to SQL query found in the naming. And where it finds positive match it makes as a channel (matching) between publisher message and the subscriber interest.

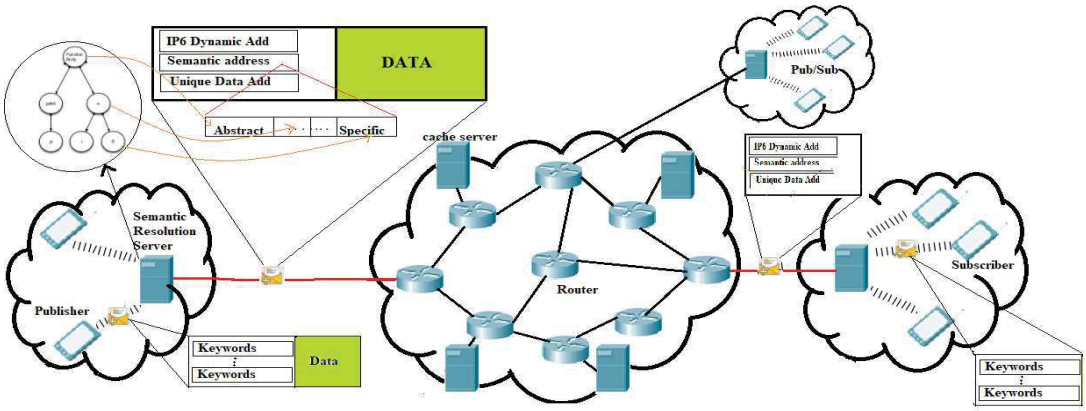
Table 1 – Data transmission classes

Type	Description	Example
R1	Requesting **Any Data Content** from **specific Publisher**	Voice call with specific user
R2	Requesting **Specific Data Content** from a **specific Publisher**	Accessing Cloud Storage
R3	Requesting **Specific Data Content** from **Any Publisher**	Downloading a song or a software installation file.
R4	Requesting Information with **Any Data Content** from **Any Publisher**	Searching for information using Google “How to make a kite”.

The naming scheme is consisted of the following: IPv6: for dynamic terminal mobility and fast routing; semantic tree based address (128 bit) - it represents the content keywords; unique data address is the Publisher ID

address; at least one address should be specified by the Subscriber his message (picture 1).

Routing Scheme: each router holds a routing table that match Semantic keywords to geographical location of the nearest publisher or cache; each Record can be hold for a specific Time to Live (TTL); TTL is directly proportional to the number of subscribers and the frequency of Request (picture 1).



Picture 1 - SICN system architecture

In this way, our proposed naming scheme is based on three dimensions knowing that the user (publisher/subscriber) should label the data with least one dimension. As part of the work has been developed routing table structure and the caching policy used by SICN scheme.

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