



*Technology Opportunity, Ref. No. UZ-13/077*

## **System, apparatus and method for efficient multicast key distribution**

A multicast solution is provided which enables a fast and secure key distribution by appropriately exploiting the properties of orthogonal systems of vectors. The method is particularly useful when the number of users is very big, that is when traditional multicast protocols become computationally too expensive.

**Keywords** Multicast key management, data transmission security, pay per view TV, internet radio, stock quote services, video-conferencing, multimedia content delivery networks.

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**Reference** in preparation

**Background** In many applications one has to deliver data from a sender to multiple receivers, and often a huge amount of data needs to be delivered very quickly. Usually the group of people receiving the information is highly dynamic, with users constantly joining and leaving. Many of these multicast applications require security in data transmission, i.e. data can only be exchanged among an exclusive group of users.

**Invention** The invention allows to distribute keys from a sender to multiple receivers in a fast and secure way, exploiting orthogonality in vector spaces. The derived multicast protocol is also efficient with respect to the dynamics in the group of users. The overall computational cost is very competitive with respect to existing solutions, especially for big networks.

**Fields of Use** Many multimedia applications exploit multicast solutions, including stock quote services, video-conferencing, pay-per-view TV, internet radio, multimedia content delivery networks.

**Patent Status** Patent application filed

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