This protocol is between metadata server (MDS), client (C), and key distribution server (KDS) for a file with root key K_R and user A. We assume that KDS is given private key KR_A, which is paired with public key KU_A.

$$
\begin{array}{rcl}
C \rightarrow MDS & : & \text{open request} \\
MDS \rightarrow C & : & E_{KU_A}(K_R) \\
C \rightarrow KDS & : & E_{KU_A}(K_R)||\text{range key request}||\text{identification} \\
KDS \rightarrow C & : & \text{appropriate range keys}
\end{array}
$$