Fig. 5. The figure shows the protocol between two coordinators (that share the parent coordinator) of a cluster which do ranging. The exchange of frames for ranging is done during the CAP of the superframe (RCAPS solution).

Fig. 6. In the example the coordinators within range of C to do ranging are shown. In the unmodified cluster-tree case only parent-child ranging is allowed. In RCAPS ranging with coordinators sharing the same parent is also possible.

cluster with RCAPS solution is presented. Figure 6 shows an example where cluster-tree and cluster-tree with RCAPS are compared.

V. LOCALIZATION AWARE CLUSTER FORMATION

We aim at designing a cluster-tree formation algorithm with the objective of improving of the average number of positioned target nodes. As the necessary signals for positioning of target nodes are emitted by anchor nodes, we propose to design a clustering algorithm that maximizes the connectivity of the anchor nodes in the cluster-tree topology. In this Section we resort to Graph Theory [24] to propose a solution for that aim. We demonstrate that in a cluster-tree