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**Combinatorial properties of frameproof and
traceability codes**

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Abstract In order to protect copyrighted material, codes may be embedded in the content or codes may be associated with the keys used to recover the content. codes can offer protection by providing some form of *traceability* for pirated data. Several researchers have studied different notions of traceability and related concepts in recent years. “Strong” versions of traceability allow at least one member of a coalition that constructs a “pirate decoder” to be traced. Weaker versions of this concept ensure that no coalition can “frame” a disjoint user or group of users. All these concepts can be formulated as codes having certain combinatorial properties.

In this paper, we study the relationships between the various notions, and we discuss equivalent formulations using structures such as perfect hash families. We use methods from combinatorics and coding theory to provide bounds (necessary conditions) and constructions (sufficient conditions) for the objects of interest.