Although compatibility has received worldwide attention for many years, no final assessment approach has been defined, yet. One explanation for the lack of progress is the terminology and individual definitions used when discussing the compatibility. Current definitions of compatibility are reviewed and a fundamental definition is proposed. The proposed definition is implemented exemplary in Euro-NCAP frontal impact tests for assessing the frontal crash compatibility. 60 vehicle models from NHTSA crash database are assessed with this approach. The assessment results are validated with real crash performance of the evaluated vehicles in NASS crashworthiness data system. The results showed consistency of the proposed definition and its potential for assessing the compatibility with the current frontal impact tests.