

## **Uncertainly about digital data carriers - The case of WORM Optical Discs**

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No digital information carrier is enough reliable and durable on the long term. We can only regret the absence of objective information enabling data loss risk appraisal. Such high hazard gave rise to initiatives to bring specialist teams together in order to carry out studies. These studies aim at reducing the threats that are 'hanging over' some collections. All digital carriers need the highest vigilance. Today, the three massively used main carrier types (hard discs, magnetic tapes and optical discs) positively respond to different contexts and complementary uses. We will not introduce any debate here about support advantages and disadvantages or storage strategies, but we will present recent investigation of one of these carriers' families: once recordable discs (CD-R, DVD+/-R, BD-R): physical WORMs (irreversible transformation of a sensitive layer during recording) for which we have to take the most important precautionary measures. We have to recognise that numerous archival collections are de facto built on Optical Discs. Sound and audiovisual data have the same destiny as all other types of information, among others digitized graphic documents with high requirement levels (in the legal field especially). Studies are thus now running with specialists implicated in 'information durability' in all its forms. Over the last few years, important debates took place in the French standardization organisation, AFNOR, about methodology and the relevant criteria used to evaluate quality of data and their possible evolution with time. A standard used to verify the information on CD media was questioned (Z42 011-2 "Verification of the information stored on CD media"). Manufacturers and users were opposed about the procedure and reference tools needed to control quality. Consequently, the standard was removed and studies had to be carried out to collect more information about methodology and criteria to describe Optical Disc's degradation thus participating to the elaboration of a new standard in the future. High concerns due to information loss hazard have encouraged several organisations in France to join efforts and form a partner group working on optical discs' durability: the Groupe d'interet scientifique (GIS-DON), created in 2006. The first members were teams from the LAM (Laboratoire d'Acoustique musicale), the LNE (Laboratoire national de metrologie et d'essais), and the LPMM (Laboratoire de photochimie moleculaire et macromoleculaire in Clermont-Ferrand). We will present some results of recent studies carried out by the LAM and LNE about a certain number of existing collections, thus bringing quantitative data on the noticed level of quality. Besides, the prevention of data loss produced by the degradation of carriers leads us on the ageing studies field. Some of results of the current works about this subject carried out with GIS-DON partners will be presented.