This paper presents an advanced conditional access system (CAS) for digital broadcasting receivers using program-related information called metadata. Digital broadcasting receivers using metadata (DBRM) provide services enhanced by using metadata and content stored in receivers. These services include program viewing that does not depend on normal broadcasting hours and the viewing of highlights that uses metadata. However, it is so easy to edit stored content by using metadata that broadcasters require a content usage control mechanism for DBRM to prevent the content stored on receivers from being put to unauthorized use or tampered with, and it is also necessary to protect users from malicious metadata. In this paper, we clarify the requirements that must be satisfied by a CAS for DBRM and propose an advanced CAS satisfying those requirements. The advanced CAS provides a secure environment for content and metadata in digital broadcasting receivers by preventing tampering and ensuring that only metadata certified by the broadcaster can be used. To evaluate the advanced CAS, we also developed a smart card and a prototype receiver on a PC. We have demonstrated in an implementation experiment that the advanced CAS can be implemented securely and utilized in broadcasting services using DBRM.