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IPR Policy of the DVB Project: Negative Disclosure, FR&ND Arbitration Unless Pool Rules OK Part 1

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ABSTRACT

The DVB Project is a European-based standards forum that for close to 15 years has been developing specifications for digital video broadcasting, many now implemented worldwide. Its IPR policy has several novel elements. These include “negative disclosure,” the obligation of each member to license IPRs essential to DVB specifications unless it gives notice of the unavailability of the IPR. This approach contrasts with the more common rule (e.g., within ANSI accredited bodies) calling for IPR disclosure and confirmation of availability on FR&ND terms. Other notable features of the IPR policy of DVB are arbitration and fostering of patent pooling. This article provides a commentary on the DVB’s IPR policy and on its application. It also describes the work of the DVB in resolving IPR “gateway” issues when the perceived dominance of technology contributors, notably through control over IPRs, risked, in the view of some members, distorting new digital markets. In two cases, DVB has created a licensing mechanism to dispel these concerns. In addition to the quality of its technical work, DVB’s success lies in its novel IPR policy and its ability to achieve consensus to resolve gateway issues.

Keywords: digital video broadcasting; FRAND; IPR; patents; patent pools; standards; television

INTRODUCTION

The DVB Project is a standards forum that has successfully developed a number of technical specifications for digital video broadcasting.² Many of these have been adopted throughout the world. In Europe, the standards are at the core of digital televi-

sion, and many have been mandated by the European Union.³ Within the United States, DVB’s specifications are used by satellite broadcasters and the U.S. cable industry and for mobile broadcasting. One of the reasons for the success of DVB has been a policy governing the intellectual property

rights (IPRs) essential to its specifications. It contains a number of elements that were novel at the time of DVB's formation. The most notable is the commitment by all members to grant licences to IPRs on terms fair, reasonable, and nondiscriminatory (FR&ND) *unless* the holder gives notice of its unavailability. This rule on "negative disclosure" turns on its head the duty found in most standards bodies: affirmative disclosure of IPRs essential to a specification *together with* confirmation of a willingness to license on FR&ND terms.⁴ Other unusual terms in DVB's policy included arbitration to settle IPR disputes and encouragement of patent pooling. This article examines the terms at length in the next section.

DVB's experience with "negative disclosure," the fostering of patent pools, and the other features of its IPR policy have served as a significant distinguishing factor of DVB specifications and have contributed to the widespread implementation of its technology. DVB's successful IPR policy is an important complement to the strength of the technology captured in its specifications. It is a central argument of this article that when making a choice among competing technologies, implementers have generally greater certainty of the extent of their exposure to costs—no more than FR&ND, even in the absence of disclosure—to be imposed by participating rights holders relevant to DVB specifications. This article argues that other standards bodies do not provide the same measure of certainty for implementers.

At the same time, DVB's policy has been subject to reassessment in light of the success or difficulties of practical application of its IPR rules. These difficulties have included problems associated with two licensing programs covering DVB standards; they have prompted the European Commission during

2007 to express its concerns directly to the DVB Project.⁵ The IPR policy is also assessed in an environment colored by concerns over "submarine patents," "patent ambushes," and doubts about the level of duty of care expected of participants in the standards process and where the policy framework is evolving to accommodate changes in regulation, judicial decisions, academic and scholarly literature, and other sources. This article discusses elsewhere the impact of developments such as the work of U.S. government agencies and the European Commission on the relationship between laws governing IPR and competition rules, the *Rambus* litigation, cases before DG Competition of the European Commission, and the work within ETSI in improving its own IPR policy.⁶

These changes have an impact throughout the standards process and the introduction of new technologies, and there is an abundant and growing literature on standards, IPR, and competition rules. A selection, undoubtedly unrepresentative, includes articles on the relationship between standard-setting and antitrust (Dolmans, 2002; Morse, 2003), the value *vel non* of a regime encouraging *ex ante* disclosure of essential IPR and licensing terms (Geradin et al., 2007; Ohana et al., 2003; Skitol, 2005; Updegrove, 2006), the analysis to be applied to patent pools (Raymond, 2002), the methodology for determining FR&ND (Einhorn, 2007; Layne-Farrar, 2006; Stoner, 2006; Swanson et al., 2005).

This article recounts the novelty and success of DVB's approach to IPR licensing. It seeks to demonstrate the following:

- DVB's policy of "negative disclosure," coupled with its fostering of patent pools, often provides to implementers

of its specifications greater commercial certainty than other policies.

- This policy, in contrast with the more commonplace regime of affirmative disclosure, has been shown, perhaps paradoxically, to offer a greater level of accurate disclosure of IPRs essential to specifications.
- The IPRM Module, as a permanent body within DVB's structure, capably informs other DVB bodies of DVB's IPR policy and its regulatory context and provides a useful forum for exchange of views on licensing terms offered by rights holders.
- The DVB has thrived also from a "community-minded," or good faith, approach to its development of specifications; this has been complemented by a disclosure regime that does not require constant reference to lawyers and patent specialists on whether essential IPR has been validly disclosed and whether the owner offers terms falling within FR&ND.
- The IPR policy of the DVB Project has been operating for well over a decade; its flexibility has been demonstrated by its continuing usefulness despite the influx of new members from various industries and geographies; it remains a suitable framework for further innovations.

The balance of this section provides a background to the DVB Project and close to 15 years of developing technical specifications for digital video broadcasting. It also sets out the recent approaches adopted by competition authorities on the involvement of standards bodies in licensing arrangements for their standards and discusses developments on IPR policy within ETSI, a standards body central to DVB's work.

The subsequent section presents a commentary on the DVB's policy on IPRs, as set out in Article 14 of its Memorandum of Understanding. DVB's arrangements for fostering the formation of voluntary licensing programs covering IPRs essential to its specifications and the tools DVB has adopted in that fostering process are set out in Part 2 of this article. DVB is at times more assertive in establishing licensing programs, notably when addressing perceived gateway or bottleneck issues; for example, in conditional access and in dominance of a technology supplier; DVB's experiences in this area are also set out in Part 2, together with some conclusions pointing out the merits and failings of the DVB's policy on IPRs.

Background to DVB

The DVB Project is an association of more than 250 members working to develop specifications for digital video broadcasting.⁷ Formed in September 1993, its activities are governed by a Memorandum of Understanding, which includes in its present form a separate article on the licensing of IPRs essential to its specifications.⁸ The members are drawn from four sectors—consumer electronics, infrastructure provision, broadcasters and content providers, and regulators—and each of the four is entitled to a set number of seats on the Steering Board, DVB's governing body. Membership is worldwide.⁹ A work item leading to a specification is launched within DVB by the preparation of commercial requirements in the Commercial Module. The commercial requirements determine the functionalities or performance characteristics to be achieved through the technical specification.¹⁰ Based on these commercial requirements, the Technical Module develops the specification. The Steering Board

thereafter adopts the specification, and it is delivered to a recognized standards body such as ETSI for completion of standardization.¹¹ Within the Steering Board (and in the modules and subgroups), decisions are generally made by consensus. The Steering Board has a mechanism to break deadlocks, but it has never been exercised.

The DVB offers a “bottom-up” approach to technological development. Within Europe, its structure, working method, and novel ties to regulators represented a departure from the view prevailing in the 1990s that the state (and European institutions) should take a leading role in industrial policy.¹² In broadcasting technology, this interventionist approach found its apogee in the work of the European Commission promoting HD-MAC, an analog high-definition standard targeted at satellite broadcasters. As a result, a “triptych” of measures was adopted, compelling use of the HD-MAC standard, offering subsidies for programming and encouraging industry to coordinate market roll-out.¹³ The “top-down” approach failed because of the reticence of broadcasters and its reliance on analog solutions at a time when digital technologies already looked more promising.¹⁴

As a result, DVB offered a number of innovations in its structure and work practices. Among these were the consensus-based decision process, inclusiveness across industrial sectors with a voice guaranteed to each sector in the Steering Board, participation by regulators from member states as a “college” within the membership, the focus on market requirements (as formulated by a Commercial Module), recognition that specification writing should meet a time-to-market test, and greater clarity on IPR licensing. Although operating under Swiss law as a

not-for-profit association, DVB formed ties to formal institutions through agreements with ETSI and CENELEC, two standards bodies recognized under European law for standardization, and by the recognition by the European Commission and other EU institutions of DVB as their reference point for broadcasting technologies.

During its close to 15 years of existence, the DVB has developed more than 100 specifications. Among the most successful are its standards for terrestrial, satellite, and cable transmissions. For example, services based on its terrestrial standard, DVB-T, have been launched or are imminent in 27 countries; a further 24 have formally adopted the standard. Among other noteworthy specifications are those more recently adopted for a consumer product offering both reception of broadcasting and interactivity (the Multimedia Home Platform) and a specification based on DVB-T for delivery of broadcast transmission to smaller mobile devices such as cell phones (DVB-H).¹⁵ DVB technologies in broadcasting have been as successful as GSM in mobile telephony.

The United States has followed a different path in its development of digital television. Its standard setting, led by the efforts of the Advanced Television Standards Committee (ATSC), has been limited generally to a competing terrestrial specification that is now being rolled out by over-the-air broadcasters. ATSC’s work was centered on a specification that could offer high-definition television (HDTV) so the purchaser could more easily appreciate the difference in technology.¹⁶ Within the United States, other broadcaster services have taken up specifications from DVB’s “toolbox.” For example, both Echostar and DirecTV use the DVB-S specification for their satellite services, and market participants have not followed ATSC for introducing

mobile broadcasting. Japan has created its own terrestrial specification, ISDB. ATSC has been taken up by Mexico and Canada and certain other territories; Japan's ISDB is the leading contender for terrestrial transmissions in Brazil.

This article generally presents the IPR policy of the DVB Project. It is based not only on published materials cited in the notes, but also on information drawn from the files of the DVB Project, including reports of the meetings of its Steering Board and the IPR Module.

Recent Regulatory Developments

This assessment of the IPR policy of the DVB Project is undertaken at a time of a shifting regulatory landscape. Authorities long appeared to disfavor meddling by standards bodies in licensing issues. Now competition authorities are openly signaling that there is little risk of a per se condemnation of ex ante royalty discussions within standards bodies. In addition, standards bodies are reviewing their IPR policies and practices in light of the series of decisions from the U.S. Federal Trade Commission and U.S. courts on the conduct of Rambus, a holder of essential IPR in a standard issued as a result of a process in which Rambus participated.¹⁷

A discussion of the IPR policy of a standards body can be undertaken only within the regulatory framework in which it operates. As a collective activity frequently comprised of competing commercial players, a standards body and its members must be wary of practices that violate competition rules. This is notably the case for the policy adopted and implemented by a body in respect to the licensing of IPRs essential for its standards. For example, the rejection of a candidate technology to be included in a specification on the basis that the

owner's terms for licensing are not acceptable could be viewed as an impermissible collective boycott. As a result, the view long prevailing among standards bodies has been that any licensing, discussion of terms, or patent pooling effort should occur well outside a body's activities. In other words, a standards body should focus on the best technical solution to a technology challenge; licensing should be addressed after the solution is found and outside of the standards context. ETSI's attitude is representative. Its Guide on Intellectual Property Rights states:

*Specific licensing terms and negotiations are commercial issues between the companies and shall not be addressed within ETSI. Technical Bodies are not the appropriate place to discuss IPR Issues. Technical Bodies do not have the competence to deal with commercial issues. Members attending ETSI Technical Bodies are often technical experts who do not have legal or business responsibilities with regard to licensing issues. Discussion on licensing issues among competitors in a standards making process can significantly complicate, delay or derail this process.*¹⁸

DVB has generally followed this approach, and while its policy is innovative, it has adhered to the accepted position that a standards body should be reticent to set terms for licensing. This approach appeared to be supported by regulatory authorities.

Recent regulatory pronouncements indicate an evolution in the attitude of both the U.S. authorities and the European Commission. For example, in its 2004 guidelines on competition policy and technology transfer agreements, the European Commission indicated that it was prepared to accept that terms for licensing a contribu-

tion could be discussed before standard is adopted. It wrote:

*In certain circumstances it may be more efficient if the royalties are agreed before the standard is chosen and not after the standard is decided upon, to avoid that the choice of the standard confers a significant degree of market power on one or more essential technologies.*¹⁹

During 2005, the leading officials of the two agencies responsible for U.S. federal enforcement of antitrust laws adopted a similar position (Pate, 2005; Platt Majoras, 2005). These pronouncements on the shift in regulatory principles have now, in the United States, been applied in practice with the confirmation by the U.S. Department of Justice in business review letters that it would not take antitrust enforcement action against standards bodies whose policies require, in one case, working group members to disclose patents and patent applications, to commit to FR&ND licensing terms, to declare most restrictive licensing terms, and to submit to arbitration; and, in the other case, provide for a facility for disclosure of patents and letters of assurance for licensing terms.²⁰

These agencies, together with the European Commission, have already, for a time, treated, as comporting with antitrust laws, patent pooling efforts when meeting certain procompetitive requirements as to essentiality of included IPRs, process of evaluation, and other matters.²¹ As part of their more general review of the relationship between IPRs, standard-setting, and antitrust policy, the U.S. agencies have recently considered the place of patent pooling as a mechanism to achieve licensing efficiencies for bringing to market standardized technologies.²²

Impact of Rambus Cases

In parallel with the hearings, public statements, and other regulatory action of the European Commission and U.S. agencies, the terms of an IPR policy in a standards body and the duties of a participant in that body have been the subject of extensive litigation. Briefly, Rambus, a technology provider, participated in the work of JEDEC, a standards body, which resulted in a new standard. At the time, Rambus had IPR relevant to that standard or to other work items within JEDEC. Rambus did not disclose this IPR but sued for infringement implementers of JEDEC standards.²³

The precise elements of the claims and defenses are beyond the scope of this article. Rather, the continuing *Rambus* litigation is noteworthy for the tone it has set for the attitude of standards bodies to their IPR policies. Two conclusions have been drawn:

First, standards bodies have been brought to examine their policies in order to determine whether they are sufficiently precise to alert participants of their obligations of disclosure, licensing, etc of essential IPR. Here the policies of these bodies are measured against the detailed finding of the failings of JEDEC.²⁴ If a standards body finds that its policy falls short, it may well take steps to provide greater certainty to its members and to implementers by clarifying or where needed recasting its IPR rules.

Second, these bodies and their members are reviewing the duties which a standards participant owes to a body and its fellow participants. In other words, can the participant be held to a duty of care beyond that expected in normal commercial dealings, for example to a duty of good faith?²⁵

ETSI and Disclosure

The shift in position by competition authorities suggests greater scope for action by standards bodies and their members when addressing the licensing of IPRs essential to their standards. At the same time, ETSI has been considering reforms of its IPR policy. ETSI's activities in this area are important because the majority of DVB's specifications are delivered to that body for formal standardization. Because of these close ties, there has been at times a tension between the DVB's policy of "negative disclosure" and ETSI's more familiar approach of affirmative disclosure and confirmation of licensing terms.²⁶

This is not the first time ETSI's policy has been an important factor for DVB's. Shortly after its formation in 1988, ETSI adopted an interim policy that would have obliged members to license on FR&ND terms (unless essential IPR was withdrawn) and encouraged early disclosure of licensing terms, including a maximum royalty. This initial approach was abandoned in favor of a policy following the prevailing ISO model.²⁷

More recently, ETSI has once again been engaged in a review of its IPR policy. The present review was prompted by a complaint brought by MicroElectronica to the European Commission that a declaration of a patent essential to an ETSI standard had been made by Sun Microsystems, Inc. (Sun) after the adoption of the standard. MicroElectronica asserted several claims, including that the declaration was impermissibly late; the declaration was in respect of a nonessential patent (i.e., MicroElectronica claimed it could make a noninfringing implementation of the standard); and Sun failed to satisfy the ETSI

rule that it grant licences on FR&ND terms. The claim was brought to DG Competition on the basis of Microelectronica's assertion that the conduct of Sun, ETSI, and other ETSI members violated Article 81 of the EU Treaty. In respect of the Microelectronica claim, ETSI took corrective action to satisfy the European Commission²⁸ and then took steps to reform its IPR policy.

The first tangible step was a rewording of the core disclosure obligation of ETSI members. The text in its present form reads (changes to the text are not in italic):

[E]ach Member shall use its reasonable endeavours, in particular during the development of a Standard or Technical Specification where it participates, to inform ETSI of Essential IPRs in a timely fashion. In particular, a Member submitting a technical proposal for a Standard or Technical Specification shall, on a bona fide basis, draw the attention of ETSI to any of that Member's IPR which might be Essential if that proposal is adopted. (ETSI, 2006)

After this perhaps modest amendment to the text of its policy, ETSI launched a more sweeping assessment. A number of options have been presented by ETSI members, including the value of making a general declaration of willingness to license early in standards work, a level of disclosure that matches specific claims in patents with standards, an ETSI framework for licensing agreements, patent "landscaping," a definition of FR&ND to include a royalty cap, enhancement to ETSI databases of submitted declarations, and so forth. The outcome of this review led to an ETSI process to facilitate ex ante terms and conditions.²⁹ It is important to note the impact of the ETSI process on DVB: the turbulence in the normally placid waters of ETSI's IPR policy could well spill over to DVB.

IPR POLICY OF THE DVB PROJECT

This section presents generally the policy adopted by DVB governing intellectual property rights essential to its specifications. It first describes DVB's work in formulating a policy and places that activity in the context of regulatory and standards developments in the early and mid-1990s, notably the discussion within ETSI of its own policy. Subsequently, a detailed overview is offered, in the form of a commentary, of the text of Article 14 of the MoU, the basis for DVB's policy. DVB's copyright policy is then presented. The MoU includes a further key innovation: the fostering of voluntary licensing programs covering DVB specifications. This merits a fuller discussion.

DVB's Adoption of an IPR Policy

Issues relating to intellectual property rights were raised during the formation of DVB when it was operating informally as the European Launching Group—Digital Video Broadcasting. The ELG-DVB held several plenary meetings of potential members to discuss the text of a document, the Memorandum of Understanding, which would serve as its constituting text. At one of these meetings, a single paragraph was proposed as an IPR policy to the effect that members agreed to grant licences to their essential IPRs on FR&ND terms. The text was withdrawn, in part because it was a late addition when the MoU was close to signature, and because some colleagues believed that the IPR policy for DVB could be more ambitious. Once DVB was formed, the Steering Board, DVB's senior governing body, returned to the IPR issue and named two ad-hoc groups to develop a policy. This work produced a text that was adopted as an amendment to the DVB's MoU. The text of that "IPR Amendment" is in large measure

identical to DVB's IPR policy today.

Regulatory and Industrial Context: ETSI, MPEG2, "MPEG 1½"

The formulation of DVB's IPR policy took place in the context of other regulatory and industrial developments. These included most notably the attempt by ETSI to complete its own policy on essential IPRs. In addition, DVB members were participants in (or actively followed) the work on the MPEG2 standard and the fringe effort to establish a pool covering MPEG2 patents. Finally, DVB early on had to confront a direct challenge to its activities: the risk that it would produce no more than "paper," unimplementable specifications that would lose out to proprietary technology.

ETSI's IPR Policy

DVB's work on its IPR policy was influenced by the parallel activity undertaken within ETSI. ETSI had been formed recently and was striving to develop rules to counter the risk that an ETSI member holding IPRs essentially could impose onerous terms on, or indeed block, implementation of a standard.

ETSI attempted to go beyond the IPR policy commonly used in the International Organization for Standardization (ISO) and its affiliates. The ISO policy contemplated that a standard could be withdrawn if blocking IPR prevented its use. The standards body could specify a new standard working around; in other words, avoiding the infringement of the blocking IPR. This model was suitable for freestanding products. But in the context of standards for essential interfaces for communications—the focus of ETSI's activities—there was often no alternative noninfringing solution. Moreover, once a standard is adopted within the telecommunications field, the whole

industrial value chain is often committed. In the view of some during this initial period within ETSI, this gave disproportionate power to the holder of IPRs.

ETSI attempted to solve this issue by a series of IPR measures, including imposing on members an *a priori* commitment to license (except in respect of identified IPRs withdrawn within six months of the launch of a work item) and binding arbitration. It also sought to require that members would license only for monetary consideration, notify ETSI of the maximum royalty, and apply these terms on a worldwide basis as the standards achieved broad acceptance. Several members, however, complained to the European Commission, asserting that it amounted to a compulsory licence,³⁰ and ETSI was obliged to conform its policy to ISO's. The views of some leading members of DVB³¹ were shaped by this experience, and they determined to use some of the same provisions in an IPR policy as DVB was launching its activities. Indeed, the constraints imposed on ETSI, a standards body formally recognized by EU institutions, were not present for DVB, a voluntary standards consortium.

MPEG2 Pooling Effort

Concurrently with DVB's steps to formulate its IPR policy, an intense effort was underway to complete a pool covering the patents essential to the MPEG2 specification. MPEG2 is a specification covering compression and other technologies; it is a necessary underpinning of DVB's work on digital broadcasting. The standards work was undertaken within the Moving Pictures Experts Group (MPEG) within ISO. The pooling activity, led by the U.S. entity CableLabs, was not formally part of ISO. Instead, consistent with the notion then

prevailing under antitrust law calling for separation of standards work and licensing, the pooling activity was on the fringes of MPEG2. This effort would prove to be typical of such efforts: a jointly administered licensing program, making available under a single licence multiple patents, held by two or more entities, usually all relevant to a single standard or product. The patent holders participating in a pool may choose one of their number to act as administrator; in the case of the MPEG2 pool, the participants selected a third party for administration and pool promotion.³² The effort ultimately resulted in the formation of a commercial licensing administrator, MPEG LA, and the completion of a licensing regime covering MPEG2 patents.³³

The highly visible campaigning for an MPEG2 pool and the substantial resources devoted to the related patent search and formation of a licensing administrator were significant elements in the background to DVB's work on its IPR policy. It suggested that a formalized process for pooling could become commonplace in standards work, notably for broadcast technologies. This influenced the views of several participants in DVB's work, notably leading rights holders, and made more palatable the inclusion of a pooling option within an IPR text.

Challenge from "MPEG 1½"

One of the first work items of DVB was a specification for digital broadcast transmissions by satellite. Three leading European satellite broadcasters had confirmed that they would each delay introduction of digital services until completion of the DVB-S specification.³⁴ But shortly after DVB began developing its specification, there were press reports suggesting that a broadcaster wishing to implement DVB-S could well be blocked by the holders of

patents essential to DVB-S demanding an onerous royalty or otherwise impeding use of its patent. The press reports indicated that an implementer would do better to buy a package of already existing, proprietary technology dubbed MPEG 1½, where the implementer would have certainty of the extent of its exposure to royalties. DVB's work then would be unavailing because the identity of the rights holders in DVB-S and their terms would be unknown. This would present to broadcasters and other implementers an unacceptable commercial risk of patent ambush and other practices. For this reason, DVB might produce merely a "paper standard" never to be implemented.

These reports spurred the DVB to address the need for an IPR policy. DVB members had already devoted significant resources in forming DVB. It enjoyed the support of the European Commission and Member State ministries. There was little desire to have this important initiative strangled at its inception by blocking patents. Shortly after the press reports, the DVB created the ad hoc groups on IPR, which led to the drafting of its licensing policy.³⁵

DVB's Formulation of its IPR Policy

Based on that context—lessons learned from the debate over ETSI's policy and the other circumstances outlined previously—DVB set about formulating a policy covering DVB's specifications. As noted, shortly after formation, DVB created two ad hoc groups on IPR. Leadership of these groups was balanced: One group was chaired by a representative drawn from the equipment manufacturers' constituency and the second by a representative from pay television broadcasters. As work progressed, these groups often met together and were ultimately merged. The groups enjoyed a

broad membership from throughout the DVB membership, and the text adopted represents, in addition to the experience of the ETSI debate and the other circumstances noted previously, a series of compromises across constituencies.

Among these compromises was a firm obligation imposed on DVB members to grant FR&ND licences to essential IPRs, coupled with a liberal but time-constrained right to withdraw IPR. This resulted in two windows for giving notice of unavailability: the first promptly after adoption of a specification; and the second, with stricter conditions, up to final standardization.³⁶ This compromise removed the need for affirmative disclosure of essential IPR. A second compromise was the grant of a right to arbitration to settle disputes about licensing terms for IPRs essential to a specification, coupled with the expiry of such right at the time of completion of a licensing program comprising patents essential to the specification.³⁷ Patent holders could have perceived that forming pools would be a relatively easy exercise, perhaps in light of the new formalized pooling mechanisms such as MPEG LA. As a result, in their view, the prospect of being taken to arbitration was remote.

The result of this activity within DVB was an amendment to its Memorandum of Understanding, adopted by the DVB's membership in October 1996. The operative language of the IPR Amendment through two successive restatements of the MoU has remained in large measure the same (and is discussed in detail next). The text has been changed to keep pace with the widening scope of DVB's activities³⁸ and to ensure that the policy is retroactive, covering all DVB specifications, including those released before adoption of the IPR policy.³⁹ In addition, the first version of the provision on forming patent pools, Article 14.9, set a hard date for completing the pooling arrangements. The original text of Article 14.9

called for pools to be completed by the second anniversary of the October 1996 adoption of the amendment. In its original form, the IPR Amendment was prepared under the assumption that DVB's work, with the completion of the basic transmission specifications, was virtually complete, and it would not undertake further work items. That expectation has, of course, proved to be widely off the mark, and the present Article 14.9 now sets the general rule that pools should be completed within two years from adoption of the underlying specification.

Text and Commentary of DVB's IPR Policy

The important elements of Article 14 MoU are considered next. Article 14.2, the general duty to offer FR&ND licences for essential IPRs, is presented first, together with its reach (members and their affiliates, Art. 14.4) and the technologies covered (Art. 14.5). The time limitations for negative disclosure, Articles 14.1 and 14.3, are then set out, together with the effect of notice on other members (Art 14.6). Article 14 also provides for enforcement of these IPR rules (arbitration, Art. 14.7); there are other remedies elsewhere in the MoU (e.g., Art 2.1, commitment "to purposes of DVB"). Other legal issues are considered, including retroactivity of the provisions (Art. 14.8), the effect of withdrawal from DVB (Art 15), and the relationship of DVB's rules with those of other standards bodies. Finally, the IPR Module, DVB's separate body to review IPR issues, is presented (Art 9). The next section covers DVB's policy on copyright. (The provision forming the basis of DVB's fostering of patent pools, Article 14.9, merits a lengthier discussion; it is treated in Part 2 of this article.)

Obligation to License on FR&ND Terms

Article 14.2 MoU sets out the core obligation of DVB members in respect to licensing their IPRs essential to DVB specification. That section provides:

14.2 With respect to any IPRs, owned or controlled by the Member or any of its affiliated companies, under which it or any such affiliated company has the free right to grant or to cause the grant of licences and to the extent that such IPRs will be necessarily infringed when implementing any specification approved by the Technical Module, other than those that are notified under clause 14.1 hereof, each Member hereby undertakes, on its behalf and on behalf of its affiliated companies, that it is willing to grant or to cause the grant of non-exclusive, non-transferable, world-wide licences on fair, reasonable and non-discriminatory terms and conditions under any of such IPRs for use in or of equipment fully complying with such specification to any third party which has or will submit an equivalent undertaking with respect to any relevant IPRs it may have or obtain with respect to such specification.

Article 14.2 sets out the leading principal of the IPR policy. It provides that a member shall grant licences on terms FR&ND to IPRs that are necessarily infringed when implementing a DVB specification. "Intellectual property rights" is a broad term. In practice, the DVB's policy is focused on patents held by members; these are the subject, for example, of the pooling efforts (described further in this article). The

status of patent applications and copyright are discussed elsewhere.⁴⁰

The notion of “fair, reasonable, and nondiscriminatory” is not free from controversy. Indeed, it is sometimes contended that the expression is meaningless.⁴¹ DVB has not attempted to offer a definition, in part because the discovery of price and other terms is generally left to the agreement of commercial actors and normally outside DVB’s activities. However, DVB has provided a forum for discussion among DVB members of the licensing terms proposed by one or more rights holders and has developed other mechanisms (e.g., arbitration, fostering the pooling process) that may have an impact on terms.⁴²

Terms based on FR&ND are to be available not just to other DVB members but also to “any third party” that wants to use DVB technology. There are some limitations on this duty. First, the IPR must be essential; that is, “necessarily infringed when implementing [the] specification.” There is no duty if there are alternative technical means available to implement a DVB specification. The availability of an alternative has been understood to mean “from a technical point of view.” The test is not based on the economic feasibility for the licensee to take up the alternative.⁴³ Second, the licensee must use the IPRs for “equipment fully complying with [the] specification.” Finally, the licensing arrangement must be symmetrical: the licensee must make an “equivalent undertaking”; this is, agree to grant a license to the licensing member on FR&ND terms. This is a safeguard protecting the licensing member who deals with a licensee that is not a DVB member (and thus, otherwise not under the same duty as the licensor).

The rule on offering FR&ND terms is binding on DVB and its affiliated com-

panies. Article 14.4 gives the definition of “affiliated companies”:

14.4 As used in this Article 14, “affiliated company” shall mean, in respect of a Member, any legal entity which directly or indirectly controls, is controlled by, or is under common control with the Member, but only as long as such control exists, where the term “control” means the ownership, directly or indirectly, of more than 50 % of the interest representing the right to vote or to manage the affairs of an entity.

The definition includes, for a DVB member, a company that becomes “affiliated” after the date of DVB membership; the acquired company’s portfolio becomes subject to the FR&ND regime. Also in some cases, two or more DVB members can jointly own an entity that may, under the control arrangements among the owners, be treated as an affiliate of one or both members for the purposes of the IPR rules.

The rules offer a list of the technologies covered by the IPR policy. Article 14.5 provides:

14.5 This Article covers digital video broadcasting via satellite, cable, terrestrial and broadband wireless (MMDS, LMDS, etc) means and incorporating the global MPEG2 standard for source coding and multiplex to the extent possible, together with the relevant aspects of the related receiving equipment (including in each case scrambling) and does not cover associated matters such as conditional access. For the avoidance of doubt Article 14 does not cover the IPR arising from the MPEG2 standard itself.

The first sentence is intended to encompass the sweep of DVB specifications. All the specifications adopted by DVB fall under Article 14 (and are the subject of the “90-day notices” discussed later). The text conforms to the purpose clause of DVB at Article 1.3. It was designed to make clear, at an early stage in DVB’s development, that certain technologies, while not fitting into a traditional definition of “broadcasting” such as multichannel multipoint distribution channel (wireless cable or MMDS), would nonetheless be subject to DVB’s IPR rules. Today, if a list were still suitable, it would include, for example, DVB’s specifications for television services received over the Internet (IPTV). If the text is changed in an amendment to the MoU, it is likely to list only the exclusions.

The section makes clear that the rules do not cover “associated matters such as conditional access” or the IPR arising from the MPEG2 standard. The exclusion of conditional access is part of the legacy of the “Conditional Access Package” under which certain DVB members promised to make available scrambling technology but reserved conditional access, treating it outside of DVB’s technical work and its legal framework. The objective of the suppliers was to avoid an argument that the DVB’s IPR terms required them to license their proprietary conditional access technology. Rather, these terms would come under the Conditional Access Package and ultimately the TV Standards Directive. The concern about “licensing creep” prompted the exclusion from the IPR rule of other “associated matters.”

The section also excludes “IPR arising from the MPEG2 standard itself.” The MPEG2 standard specified compression and other technologies related to digital television and other services. The work

of MPEG2, an ISO body independent of DVB, was virtually complete when DVB launched its work on transmission standards. At the time of drafting the text that would become Article 14, the IPRs covering MPEG2 were the subject of a pooling campaign. For this reason, MPEG2 was excluded from Article 14.

“Negative Disclosure”: Inability to License for FR&ND

As noted previously, DVB’s policy reverses the normal mechanism of the IPR rules of a standards body. The common approach for standards bodies is to encourage disclosure and then to ask the rights holder to confirm it is willing to license on FR&ND terms. In DVB, disclosure is not required *unless* the holder cannot grant such licences. There are two windows for this “negative disclosure.” The first occurs shortly after the specification is adopted by DVB. Section 14.1 provides:

14.1 Within 90 days from notification of approval of a specification by the Technical Module, each Member shall, on behalf of itself and its affiliated companies, submit to the chairman of the Steering Board a list of all the IPRs owned or controlled by the Member or any of its affiliated companies, to the extent that the Member knows that such IPRs will be necessarily infringed when implementing such specification and for which it will not or has no free right to make licences available.

The first window for disclosure opens when the DVB issues its “90-day letter” shortly after the Technical Module adopts a specification.⁴⁴ Often several specifications are listed in the letter. The member that cannot grant licences on FR&ND

terms in respect to its IPRs essential to the specification submits within 90 days a list of its unavailable IPRs. There are two circumstances contemplated as the grounds for unavailability. First, the member is entitled to announce it “will not ... make licences available” presumably in the exercise of its commercial judgment. In addition, it could give notice that it “has no free right to make licences available” if, for example, it has previously granted an exclusive right to a third party. To date, no list of unavailable IPRs has been submitted.

This provision is arguably generous to the rights holder; it allows the rights holder to signal, when the specification is virtually complete, that it is unwilling to grant a licence to essential IPR. This timing is consistent with the view widely shared among some DVB members that an obligation to make an earlier notice would not be productive because the specification would still be fluid. Until adoption by DVB’s Technical Module, the final shape of the specification and its incorporated technologies are not certain. It is only at that point that a DVB member has all the information needed for a notice.⁴⁵ In addition, this first 90-day window offers a reasonable time for a DVB member to review its portfolio to determine if it has no free right to license a patent for an identified specification for FR&ND licensing. The task is easier in most cases because the internal review would not cover all relevant patents but only that smaller number of patents where, because of pre-existing licences or other contractual arrangements, there is a question of availability.⁴⁶

The second window for negative disclosure closes when the DVB specification completes the standardization process within ETSI or another appropriate standards body. Article 14.3 states:

14.3 A Member shall have the right up until the time of final adoption as a standard by a recognised standards body of a specification approved by the Steering Board to declare to the DVB Steering Board that it will not make available licences under an IPR that was subject to the undertaking for licensing pursuant to article 14.2 above, only in the exceptional circumstances that the Member can demonstrate that a major business interest will be seriously jeopardised.

Here the DVB member makes a declaration that its essential IPR is unavailable because if it is compelled to grant a licence on FR&ND terms, “a major business interest would be seriously jeopardised.” In the case of this section as well, no declaration of unavailability has ever been made, so it is difficult to identify the range of situations that would constitute a “major business interest” and serious jeopardy.⁴⁷ At one extreme, a member could arguably demonstrate serious jeopardy to a major business interest if application of DVB rules would trigger its bankruptcy.

The test of unavailability is different between Section 14.1 and Section 14.3. Section 14.1 is arguably more straightforward than Article 14.3. The member invoking Section 14.1 simply asserts the right to withdraw its IPR or claims it has no free right by operation of law or pre-existing contract in order to make its IPR available. Section 14.3 sets a higher threshold for unavailability because the member must demonstrate “jeopardy” to its “business interest.” The circumstances leading a member to make a declaration under Section 14.3 are not based on its purely subjective assessment because the declaring member has to make a “demonstration” to the Steering Board.

The Steering Board may offer its own views as to whether the member has satisfied the test of Article 14.3.⁴⁸

While the text varies on the process to be followed for submitting a list of unavailable IPRs under Section 14.1 and making a declaration under Section 14.3, in both cases, the member should make its submission to the Chairman DVB.⁴⁹ The content is likely to be the same: a list of unavailable IPRs. The place of patent applications in such a list is not clearcut. In the case of a patent application, both windows may have closed before the patent issues. In such case, where the member would, with the issuance of the patent, have essential IPR *and* such IPR would be unavailable, it should, even while its application is pending, take one of the actions under Article 14.1 and Article 14.3.

The IPR rules apply equally to all members and all their IPRs essential to any DVB specification, whether they joined at DVB's inception or more recently. A prospective member could be concerned that at the time of joining, both windows for a specification could long have closed and it would not have an opportunity to give the notice of unavailability of its own IPR. Under these circumstances, DVB has, in response to a request, allowed a new member a further 90-day period so it could review its IPR portfolio.⁵⁰

The MoU also addresses the concern that a member, submitting a list under Section 14.1 or declaring under Section 14.3, could take the position that it has put other members on notice of their infringement of essential IPR. Under U.S. legislation, a willful infringement could arguably subject the infringer to multiple actual damages.⁵¹ DVB members have agreed, however, that neither action under Article 14 will have this effect. Article 14.6 provides:

14.6 Any notifications made by Members in connection with this Article 14 shall not constitute notice from any Member to any other Member (or any Observer) or constitute a charge or basis for a charge, of infringement of any IPR or related damages claim of any kind, for any purpose, under any applicable law.

Enforcement of Licensing Terms

The MoU expressly provides for arbitration as a remedy for violation of the IPR rules. Article 14.7 states:

14.7 Each Member hereby agrees, on its behalf and on behalf of its affiliated companies, that, subject to clause 14.9 of this Article 14, all disputes with any other Member of these statutes (MoU) regarding solely the terms and conditions of licences arising in connection with the undertaking in this Article 14 shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by three arbitrators appointed in accordance with such Rules. Arbitration shall take place in Frankfurt, Germany. German substantive law shall apply. The language of the arbitral proceedings shall be the English language unless agreed otherwise between the Members.

The scope of the arbitration provision is limited to "the terms and conditions of licences arising in connection with the undertaking in this Article 14." The general case contemplated would be a dispute between a member and a prospective licensee as to whether the terms offered satisfied FR&ND. Presumably, arbitration would

also cover a member's refusal to license, whether in the context of a licensing dispute the member had made a satisfactory notice under Article 14.1 or Article 14.3 of the unavailability of its IPR, and other questions relating to provisions of Article 14.⁵² The right to arbitration does not apply to specifications for which a licensing program has been established in conformity with Article 14.9.⁵³

Arbitration can be invoked only by DVB members. This could be considered anomalous because the duty to license on FR&ND terms benefits "any third party" according to Article 14.2. A reason for this limitation in Article 14.7 is due to the novelty of including arbitration in the IPR rules of a standards body; in preparing the IPR rules, the drafter could well have intended to limit the universe of potential claimants.⁵⁴ At the same time, such a provision would make membership more attractive to the implementing community.

The arbitration provision specifies the applicable procedural and substantive law. The selection of rules of the International Chamber of Commerce is unexceptional and makes available a widely known body of arbitration procedures. The application of German substantive law and the choice of Frankfurt as the venue for the proceedings can be explained by the relative importance of Germany during the early days of DVB, based on such factors as the number of meetings of its governing bodies in Germany and the composition at the time of its senior management. It is DVB's expectation that the notion of "fair, reasonable and non-discriminatory" is well settled and that an outcome under Germany's substantive law would be no different than what could be expected from other jurisdictions.⁵⁵ Article 14.9 states that "all disputes ... *shall* be finally settled," indicating that arbitration

is the exclusive means to resolve such disputes, precluding recourse to judicial proceedings.

Arbitration has its inconveniences; it can be expensive and unwieldy. The ICC court of arbitration can be a costly forum, especially when three arbitrators are required. At the same time, the MoU does not exclude other nonbinding forms of dispute resolution such as mediation and use of experts. Moreover, the approach adopted to complete the arrangements for licensing the Java components of MHP—review of terms by competition counsel and resolution of open points by mediation before his or her favorable opinion was delivered—could also be characterized as a form of mediation.⁵⁶

The right to arbitration is an innovative development in DVB's rules.⁵⁷ It provides a mechanism for a relatively speedy resolution of a licensing dispute. It settles applicable law, procedure, and venue, reducing for the claimant the complexities of litigation and the exposure to dilatory pretrial practices. For the licensing member, it defines the class of potential claimants (members only) and confines the dispute to matters arising out of Article 14, arguably excluding ancillary claims often joined in a civil case. Overall, it was part of a calculus of avoiding ex ante disclosure of rights and licensing terms. The right was a development significantly beyond other IPR models. It was also one of the elements of IPR policy that had been proposed for ETSI but ultimately found to be more acceptable in a private law body such as DVB.

A further innovative feature of the arbitration provision is the explicit link to Article 14.9 and patent pooling. The assumption was that an acceptable range of royalties and other terms falling within an FR&ND framework, if not offered by the

rights holder, could be determined through arbitration or through the pooling process. As noted, arbitration does not apply to specifications for which a licensing program has been completed. The prospect of the lapse of the arbitration provision is meant to serve as a spur for the completion of patent pools.⁵⁸ Over time, this “spur” appears to be the most useful benefit because arbitration under Article 14.7 has indeed never been invoked. This is perhaps due to the costs involved. Or it is the result of the actions of rights holders to complete pools to avoid this remedy or by their offer of licensing terms, which, in the eyes of the implementers, are sufficiently FR&ND.

Arbitration is a right to be exercised by DVB members. DVB as an entity does not have a process set out in its MoU to penalize recalcitrant members, such as those refusing to offer their essential IPRs on FR&ND terms. At times there has been reference to the perceived failure of members to satisfy the duty under Article 2.1 to “commit themselves to the purposes” of the MoU; for example, if they notoriously promote a technology competing with DVB’s or disparage a DVB specification. But this has not yet served as the basis for imposing a penalty such as expulsion on the offending members.⁵⁹

Other Legal Issues

Several other provisions are relevant to the IPR rules of the DVB Project. These confirm that:

- The IPR rules set out in the MoU, even if adopted after the initial formation of the DVB, apply to all its specifications.
- A member’s duty to offer FR&ND terms continues even if it chooses to withdraw from DVB.

- DVB’s rules are not intended to displace the IPR policy of recognized standards bodies responsible for standardizing DVB specifications.

Date of Effectiveness of IPR Policy

As already indicated in section II.A, the IPR amendment to the Memorandum of Understanding was adopted some months after the formal inception of the DVB. One issue at the time was whether the members’ licensing duty under the amendment would be retroactive to the date of DVB’s formation. The amendment confirmed that the duty was retroactive; Article 14.8 in the present text reconfirms that position.⁶⁰

14.8 Clauses 14.1 through 14.6 of this Article 14 to these Statutes (MoU) sustains in force the provisions of Article 19 of the previous version of the statutes (MoU) adopted by the General Assembly in accordance with the voting procedure pursuant Article 15 of that version and those provisions applied retrospectively.

Effect of Withdrawal from Membership

A member’s duties under the MoU do not lapse at the time of its withdrawal. Article 15 provides a mechanism for withdrawal but states, “Such withdrawal shall not affect the existing obligations on the Member in its individual capacity.” These obligations include the continuing duty to offer FR&ND terms in respect to its IPRs essential to specifications adopted before its withdrawal. This applies as well to those specifications that, when the member withdraws, are within the time periods for notice of unavailability. Other specifications will have been still in development at the time of the member’s withdrawal. When these specifications are completed, DVB

delivers to the former member (as it does to all current members) the “90-day notice,” opening the window for submission of lists of unavailable IPRs.

Place of IPR Rules of Formal Standards Bodies

DVB develops specifications and looks to recognize standards bodies such as ETSI or CENELEC to adopt standards incorporating these specifications. These bodies have their own IPR policies that follow the more common model requiring disclosure of essential IPR (positive disclosure) and confirmation that the IPR will be available on FR&ND terms. This model does not contradict DVB’s approach but does present differences. In its MoU, DVB makes clear that its policy is not intended to displace those other policies. The chapeau to Article 14 states:

Recognising that the DVB Project is not a standards body, the DVB Project takes the basic position that if specifications made by the DVB group are being adopted as standard by a recognised standards body the IPR policy of that standards body should apply to such standards.

In practice, the two regimes are complementary:⁶¹ the DVB policy compels FR&ND, subject to negative disclosure, and the standards body calls for positive disclosure and confirmation of licensing terms. (See further for a discussion of the merits *vel non* of a disclosure-based regime.) While expecting compliance with its own IPR policy, DVB also alerts its members to the need to adhere to the rules of the standards body to which its specification is delivered. For example, in the form of circular letter giving notice of the start of the 90-day period under Article

14.1 after adoption of a DVB specification, the DVB writes:

*If you are a member of the standards body applicable to this specification, we expect you to comply with the IPR rules of that body. If you are not a member it is nonetheless good practice for you to comply with its IPR rules.*⁶²

Thus, in the case of a DVB member that is also a member of ETSI, it can remain silent during the 90-day window, as a result signifying that if it has essential IPRs, they are available for license on FR&ND terms. But once the specification has been submitted to ETSI, it must observe that body’s disclosure rules.

DVB’s IPR Module

The MoU also provides for a separate body within DVB, the Intellectual Property Rights Module, to treat IPR issues. The IPR Module is described as follows:

[A] forum for members to seek out solutions to any intellectual property issue that arise in relation to DVB specifications, within the framework of Article 14.

Article 9 MoU, as noted above, the European Launching Group—Digital Video Broadcasting—discussed the suitability of an IPR policy, and soon after formation, the DVB created two IPR ad hoc groups. These were merged into a single ad hoc group. After adoption of the first restated MoU in 1996, the work was formalized into the DVB’s organizational structure as the IPR Module, equivalent to the other modules covering technical, commercial, and promotional matters.

One central function of the IPR Module is to provide a forum for exchange of views among members on the terms offered for licensing essential IPRs. It has served in this role notably for the terms offered by pools covering specifications for digital terrestrial broadcasting, Java, other technologies incorporated in the Multimedia Home Platform, and advanced video coding.⁶³ The IPR Module's function as forum is further discussed as one of the tools of DVB's fostering of patent pools. The IPR Module also has advised the Steering Board in IPR matters, developed a copyright policy, and reviewed the IPR policies of sister standards fora when the DVB is considering whether to enter into liaison arrangements.⁶⁴ In these matters, it reports to the Steering Board, which has sole power to "provide guidance on any questions of interpretation of the [Memorandum of Understanding],"⁶⁵ including in respect to Article 14 MoU.

The IPR Module is largely comprised of lawyers and patent specialists. Its membership is drawn from across DVB, reflecting its diverse industries and geographies. Like the other modules within DVB, the IPR Module has benefited from stable leadership; since inception, the IPR Module has had only three chairmen.⁶⁶ This has helped to ensure a strong institutional memory.

DVB's Copyright Policy

The term "intellectual property rights" as used in Article 14 MoU is generally limited to patents.⁶⁷ With the experience examining the licensing policies of Sun Microsystems, Inc. and with a new sensitivity to the issues arising out of the practice of normative referencing, DVB decided to formalize its policy on copyright. The DVB called upon its IPR Module to set out the policy; it was adopted (as a confirmation of DVB's practice) by the Steering Board in 2003.⁶⁸

The text of DVB's copyright policy is unexceptional. Its operative language divides the rules for the use of contributed materials into provisions to accommodate DVB's drafting of specifications and those to allow implementation of the completed specification. For creating and drafting specifications and other DVB materials, the policy calls for contributors to grant to the DVB Project a licence to use, copy, and distribute, and to make derivative works of any contribution. Once the specification has been approved, the contributor grants to DVB a sublicensable licence (a) to use, copy, distribute, and make derivative works of its contribution to the specification, and to implement the specification, and (b) to use, make, reproduce, sell, and so forth, implementations. The policy further provides that ownership of specification and other DVB materials remains vested in DVB, with the right conferred on DVB members to make copies for their own use. Third parties may obtain rights to DVB materials by decision of the Steering Board.

DVB's copyright policy also contains a provision on referenced materials. As a result of convergence across industry sectors, DVB increasingly relies on and refers to the work of other fora in its specifications.⁶⁹ The policy requires that normatively referenced materials must be publicly available for evaluation without contractual restrictions (other than those reasonably intended to limit duplication and redistribution). For implementation of the normatively referenced materials, copyright licence must be available on FR&ND terms.

ENDNOTES

- ¹ I am grateful for the comments to earlier versions of this article offered by Anthony

Dixon, Maurits Dolmans, Ruud Peters, Douglas Rosenthal, Stephen Temple, and Adam Watson Brown, by the anonymous reviewers of the *International Journal of IT Standards and Standardization Research*, and by colleagues within DVB, notably the members of the IPR Module; the remaining errors are my own. The views expressed in this article are my own and are not necessarily those of the DVB Project or any of its members. References are found at the end of Part 2 of this article.

² Information on the DVB Project can be found at www.dvb.org and further in this article.

³ Directive 95/47/EC ... of 24 October 1995 on the use of standards for the transmission of television signals, OJ L 281/51 (23 November 1995) ("TV Standards Directive").

⁴ The common practice of affirmative disclosure is found for example in the IPR policies of the American National Standards Institute (ANSI) and the International Organization for Standardization (ISO). ANSI is the umbrella organization for U.S. standard setting: it facilitates the development of standards through the accreditation of procedures used by standards developers and the approval of standards as American National Standards. ANSI's Patent Policy reads in part, "If an ANSI-Accredited Standards Developer (ASD) receives a notice that a proposed [American National Standard ("ANS")] or an approved ANS may require the use of such a patent claim, the procedures in this clause shall be followed:

3.1.1 Statement from patent holder

The ASD shall receive from the identified party or patent holder either:

- (a) assurance in the form of a general disclaimer to the effect that such party does not hold and does not currently

intend holding any essential patent claim(s); or

- (b) assurance that a license to such essential patent claim(s) will be made available to applicants desiring to utilize the license for the purpose of implementing the standard either:
 - (i) under reasonable terms and conditions that are demonstrably free of any unfair discrimination; or
 - (ii) without compensation and under reasonable terms and conditions that are demonstrably free of any unfair discrimination.

ANSI Essential Requirements s 3.1 available at www.ansi.org. (The text above takes effect in 2008; the prior text was substantial similar). ISO also follows the same practice of affirmative disclosure: ISO/IEC Directives Part 1 s 2.14, available at www.iso.org (when the originator of a proposal, or any other party involved in preparing a document, becomes aware of a patent covering the proposal, then it shall ask the holder to confirm it is willing to grant licenses on reasonable and nondiscriminatory terms). Thereafter, the declaration of the rights holder is generally made publicly available; if the holder refuses to confirm it is willing to grant licenses on FR&ND terms, then the situation is referred back to the drafting committee, presumably to reopen the standard and to specify an alternative that does not infringe on the patent. The comparable provisions of the European Telecommunications Standards Institute are discussed later in the text. (Note that the obligation of a rights holder participating in standard setting to give notice is unclear. Also the participant's duty to grant FR&ND licences is not unambiguous.)

⁵ Letter dated 4 May 2007 of Fabio Colasanti, European Commission, DG Infos, addressed to Dr. Theo Peek, Chairman DVB.

- ⁶ *Rambus*, changes to the IPR policy within ETSI and other developments are discussed further in this article.
- ⁷ Information on the DVB Project can be found at www.dvb.org. A summary of the technical work of the DVB Project is set out by the chairman of its Technical Module in Reimers (2004). A broader history of digital television in Europe is available (Bell, 2007).
- ⁸ The Memorandum of Understanding further amended and restated (on 13 December 2000) for the development of harmonized Digital Video Broadcasting (DVB) services based on European specifications (MoU). Article 14 MoU sets out the IPR policy of the DVB Project.
- ⁹ Membership includes, in addition to long-established commercial companies, entities from the open-source community and clean-room implementers.
- ¹⁰ Within DVB, “commercial requirements” do not include, for example, price points for consumer equipment or other implementations of DVB specifications. Recently, commercial requirements have begun to describe acceptable terms for licensing of IPRs essential to implementing the resulting specification.
- ¹¹ In addition to the Commercial Module and the Technical Module, the MoU establishes the Intellectual Property Rights Module (IPR Module) and the Promotion and Communications Module responsible for DVB’s presence at trade shows and for promoting DVB standards in non-European territories. Ad hoc groups also report to the Steering Board, covering such matters as budget, membership, and contacts with regulatory bodies.
- ¹² See from the abundant literature at the time on “Rhenan capitalism” (contrasting with the Anglo-American model) (Delmas, 1991).
- ¹³ See, among others, Council Directive of 3 November 1986 on the adoption of common technical specifications of the MAC/packet family of standards for direct satellite broadcasting, OJ L 311/28 (6 November 1986); Council Directive 92/338 of 11 May 1992 on the adoption of standards for satellite broadcasting of television signals, OJ L 137/17 (20 May 1992). Some elements of the triptych were salvaged in later EU legislation; for example, the TV Standards Directive, *supra* n. 3.
- ¹⁴ The technical aspects of the evolution in television technology are set out in Wu, et al. (2006).
- ¹⁵ The MHP specification has been adapted for other broadcasting environments such as OpenCable Application Platform (OCAP) by the U.S. cable industry for bidirectional household equipment, the U.S. Federal Communications Commission, In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility between Cable Systems and Consumer Electronics Equipment, CS Docket No 97-80; as B23 by ARIB, the Japanese broadcast standards body; and is a component in the Blue-ray disc specification. DVB-H, in spring 2007, underwent trials in a number of territories, including Europe and the United States.
- ¹⁶ There were different market considerations in the United States and Europe. In Europe, analog picture quality, based on the PAL and SECAM standards, was generally superior. The advantage presented by digital compression technologies to European viewers was the greater number of broadcasting services. In contrast, Americans already enjoyed a multitude of analog services through cable or satellite networks; HDTV through ATSC is a distinctive improvement over the NSTC analog standard. In any event, DVB’s “toolkit” offers both HDTV and standard definition television.

- 17 In the matter of Rambus, Inc. (U.S. Federal Trade Commission, docket no 9302) Opinions of the Commission (31 July 2006) (as to liability) (5 February 2007) (as to remedy). The FTC's liability opinion also summarizes *Rambus, Inc. vs. Infineon Techs AG*, 313 F3d 1081 (Fed Cir 2003) and other non-FTC judicial developments. The FTC decisions are now (December 2007) the subject of appeals before the U.S. Court of Appeals (DC Cir, Nos 07-1086, 07-1124).
- 18 See, for example, ETSI (2007). To the same effect, International Telecommunications Union, ITU-T Patent Policy at preamble para 2.2, available at <http://www.itu.int/ITU-T/dbase/patent/patent-policy.html> ("negotiations ... are left to the parties concerned and are performed outside the ITU"). Alliance for Telecommunications Industry Solutions, Operating Procedures at para 10.4, available at <http://www.atis.org/ATISlop.pdf> ("[A]ll negotiations and discussions of license terms shall occur between the patent owner and the prospective licensees outside the deliberations of Forum or Committee [of ATIS]. No discussion or negotiation shall be permitted in any Forum or Committee"), and ISO/IEC Directives Part I (5th ed. 2004 Geneva) s 2.14 .2(b) ("Such negotiations [of licensing terms] are left to the parties concerned and are performed outside ISO and/or IEC").
- 19 European Commission, Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02) (27 April 2004) para 225.
- 20 VITA Business Review Letter (30 October 2006), available at www.usdoj.gov/atr/public/busreview/219380.htm and IEEE Business Review Letter (30 April 2007), available at www.usdoj.gov/atr/public/busreview/222978.htm.
- 21 European Commission, *Commission approves a patent licensing programme to implement the MPEG-2 standard* (IP/98/1155) (18 December 1998), MPEG-2 Business Review Letter (26 June 1997), available at www.usdoj.gov/atr/public/busreview/1170.htm ("MPEG2 Business Review Letter"); DVD 3C Business Review Letter (16 December 1998), available at www.usdoj.gov/atr/public/busreview/2121.pdf; European Commission, *Commission approves a patent licensing programme to implement the DVD standard* (IP/00/1135) (9 October 2000), DVD 6C Business Review Letter (10 June 1999) available at <http://www.usdoj.gov/atr/public/busreview/2485.pdf>; DVB-T Notification, Case COMP/C-3-38143, OJ C 174/6 (19 June 2001); and European Commission, *Antitrust clearance for licensing of patents for third generation mobile services* (IP/02/1651) (12 Nov 2002), 3GPP Patent Platform Partnership Business Review Letter (12 November 2002), available at www.usdoj.gov/atr/public/busreview/200455.pdf.
- 22 See US FTC (2003) (summarizing Carl Shapiro, Navigating the Patent Thicket, on pools "to facilitate orderly transfer of intellectual property at lower combined rates and higher combined profits," avoiding Cournot's complements problem); 42 (pools "have become critically important mechanisms for enabling widespread use of new technologies that require access to a multitude of patents dispersed among a multitude of parties," quoting Stephen Fox, Hewlett Packard). See US DoJ & US FTC (2007) (discussing solutions to patent hold-up). The fostering of patent pools is an important feature of DVB's overall IPR policy.
- 23 *Rambus, supra* n 17.
- 24 *Rambus, Inc. vs. Infineon Techs. AG*, 318 F3d 1081 (Fed Cir 2003).
- 25 See, for example, Abbott and Gebhard (2006) ("[F]irms participating in SSOs should exercise good faith efforts to abide by any disclosure policy and otherwise conduct themselves in good faith through

the process”); and *Broadcom vs. Qualcomm*, 501 F.3d 279 (3d Cir 2007) (finding assertion of broken FR&ND promise to standards body could be basis for antitrust claim).

The *Rambus* litigation is not discussed further in this article. At the time of the decision in the U.S. Federal Circuit, *supra* n 17, DVB examined its Article 14 MoU and its practices, and concluded that these did not present the same issues as found in JEDEC: Article 14 MoU is an unambiguous rule for licensing on FR&ND terms unless an IPR has been notified as unavailable; the timing of the duty is clear: it attaches at the time of membership, subject to notices of unavailability submitted within strict time limits; the rules are confined to essential IPR; and the scope for “gaming” the rules by a DVB member is not likely in light of *Magill* ECJ (6 April 1995) and *IMSECJ* (29 April 2004), to be tolerated in the European Union.

- 26 On elements of this tension, see discussion of the chapeau to Article 14.
- 27 The controversy surrounding the ETSI interim IPR policy and its rejection by the European Commission influenced the work within DVB on its own IPR policy.
- 28 The corrective action was removal of Sun’s declaration. For an explanation of this action, together with a statement from Sun, see [http://webapp.etsi.org/ipr/IPRList.asp?Project=&Countries=&y=6&OrderBy=DECLARATION_DATE&AppNumber=&ETSIDeliverable=TS_101_476&Notes=&Order=ASC&Country=&separator=%2C%2C%3B%2C-&Company=Sun Microsystems%20Inc.&Title=&OpProjects=or&PatentNumber=&Operator=or&Year=&Day=&x=31&Month=](http://webapp.etsi.org/ipr/IPRList.asp?Project=&Countries=&y=6&OrderBy=DECLARATION_DATE&AppNumber=&ETSIDeliverable=TS_101_476&Notes=&Order=ASC&Country=&separator=%2C%2C%3B%2C-&Company=Sun%20Microsystems%20Inc.&Title=&OpProjects=or&PatentNumber=&Operator=or&Year=&Day=&x=31&Month=)

ETSI disclaims any review of declarations of essentiality. The Commission process that led to its decision is not pellucid. English courts examine the issue of “nonessen-

tiality” of declarations submitted to ETSI. See *Nokia Corporation vs. InterDigital Technology* (2006) EWHC 802 (Pat).

- 29 ETSI GA ad hoc group on IPR Review, List of Topics, ETSI GA/IPRR06(06)02 (2 August 06). Other standards bodies have adopted novel approaches to IPR. For example, W3C allows only technology that is royalty free. <http://www.w3.org/Consortium/Patent-Policy-20040205/#def-RF>. MPEG has proposed the development of specifications using technology where the term of patent protection has expired. Members of the Blu-ray Disc association agree that the “aggregate of ... all licences ... shall not block, frustrate or harm acceptance of any Blu-ray Disc format as a worldwide standard or development of products complying with any ... format or commercialization of the same.” Blu-ray Disc charter clause 15(4). Holders of patents essential to W-CDMA agreed “to set a benchmark ... to achieve fair and reasonable royalty rates ... to be at a modest single digit level ... targeted cumulative 5% level.” [www.3gpp.co.uk/PR/November 2002/4377.htm](http://www.3gpp.co.uk/PR/November%202002/4377.htm).
- 30 ETSI interim IPR policy, OJ C 076, 28 March 1996, pages 05-07. As a measure of the evolution of the regulatory landscape, it is not certain that the European Commission would today take the same view of all the provisions it rejected in the mid-1990s. For the Commission’s overall position at the time of DVB’s formation, see European Commission, Intellectual property rights and standardization, COM 92 (445) final (27 October 1992).
- 31 Stephen Temple, who was an initial member of DVB’s Steering Board and also the Chairman of ETSI’s Technical Assembly, has provided much of the background of this section.
- 32 There is a rich literature on pooling, its advantages to licensors and licensees, and the arrangements acceptable to regulatory authorities. For business review letters issued by the U.S. Department of Justice

and related decisions of the European Commission on licensing programs, see *supra* n 21.

³³ The arrangements for MPEG LA and the MPEG2 pool are set out in MPEG-2 Business Review Letter, *supra* n 21. There have been prior pools (e.g., in the optical storage field since 1983), but these were generally led by a rights holder and less visible than MPEG LA's well-funded effort.

³⁴ The announcement that the broadcasters were willing to postpone commercialization of satellite services until they could implement DVB-S was significant, because one had previously rejected a new, untested analog satellite standard promoted by European institutions in favor of an "off-the-shelf" technology.

³⁵ Perhaps ironically, during the later pooling process for DVB-S and other early specifications, no declared IPR was found to be essential for DVB-S.

³⁶ See discussion *infra* on Arts 14.2 (duty to grant FR&ND licences) and 14.1 and 14.3 (windows for "negative disclosure"). One participant in the formulation of the policy recalls more of a rudimentary calculus than a "compromise": "it was generally accepted by members at the time" that a rights holder should either withdraw its essential IPRs or license on FR&ND terms.

³⁷ See discussion *infra* on Art 14.7 (arbitration) on patent pooling.

³⁸ See discussion *infra* on Art 14.5.

³⁹ See discussion *infra* on Art 14.8.

⁴⁰ On patent applications, see discussion on "negative disclosure"; DVB's copyright policy is also discussed.

⁴¹ See *Broadcom vs. Qualcomm*, *supra* n. 25 and the articles cited in the text following n.6.

⁴² See discussion *infra* on Art 14.7 (arbitration) on pooling.

⁴³ There are other tests for "essentiality," notably in the context of patent pooling. See, for example, Guidelines, *supra* n 19 at paras 215–222 (favoring pools comprised of essential technologies "if there are no substitutes for the technology inside or outside the pool and the technology ... constitutes a necessary part of the package" to produce the product); and the different tests proposed in the business review letters relating to patent pools cited *supra* n 21 (ranging from "technically essential to compliance" to "literally essential" or "for which there is no 'realistic' alternative [i.e., not] economically feasible").

⁴⁴ That is, before the DVB Project has completed its own process for adopting the specification. After approval by the Technical Module, the specification is reviewed and adopted by the Steering Board and thereafter delivered to the appropriate body, such as ETSI, for standardization.

⁴⁵ The notice could arguably be given for any commercial reason or for no reason. On the other hand, a bald notice of unwillingness to license may be viewed as abusive and in breach of a duty of good faith and "community-mindedness," which are pillars of DVB's activities.

⁴⁶ At the same time, the review of relevant patents—the more comprehensive task—could put the member in a position to make a declaration for a pooling effort covering the specification, and to meet its obligations for positive disclosure in the standardizing body.

⁴⁷ It is also difficult to anticipate precisely the response of DVB to a notice of unavailability. The MoU is silent on the point. It is likely that it would follow the model of other standards fora and strip out the technologies burdened by the unavailable IPR. Other approaches might be invoked,

such as calling for the rights holder to offer better terms.

⁴⁸ And the validity of the declaration could also be subject to review under arbitration contemplated by Article 14.7 discussed later.

⁴⁹ Note that while the second window is fairly certain to close later, it is possible that the two windows will be open concurrently for a time.

⁵⁰ The request was somewhat surprising because the prospective member, during the period when considering whether to join, was presumably weighing the impact of the IPR policy on its portfolio. In the event, the new member submitted no notice of unavailability during the supplemental 90-day “window pane.”

⁵¹ 35 U.S.C. s284 (court may assess damages up to three times the reasonable royalty).

⁵² A properly framed demand for arbitration could presumably include claims based on competition law. See Dolmans and Grierson (2003).

⁵³ On DVB’s fostering of patent pools, see further in the article.

⁵⁴ The text was drafted when DVB had less than 100 members. DVB has today more than 250 members, so the number of potential claimants has grown considerably. A nonmember implementer is a third-party beneficiary of the member’s FR&ND licensing duties under the MoU and could seek a judicial remedy or propose ADR.

⁵⁵ Art. 14.7 covers only “this Article 14.” The MoU does not otherwise have a choice of law provision but is governed by Swiss law.

⁵⁶ On technical aspects, the MHP process also created an explicit “feedback mechanism” providing for resolution of a conflict between the MHP specification and test

application or a valid implementation. See DVB Project (2003).

⁵⁷ At the same time as DVB’s rules were being considered, the World Intellectual Property Organization was forming the WIPO Arbitration and Mediation Center. (See <http://arbiter.wipo.int>.) On the attractiveness of arbitration to resolve IPR disputes in the standards environment, see Brenning (2002) (as a safeguard, “the SSO could build in an arbitration mechanism for breaches of its internal rules. This would solve the problem of the long lead time of the Commission’s procedure” when it responds to a challenge, based on competition law, to licensing terms). Compare papers presented in the context of the FTC’s review of intellectual property and standards (Balto & Prywes, 2002) (“Standard-setting groups should be encouraged to require alternative dispute resolution procedures for resolving disputes about licensing terms. For example, ADR would be useful to determine whether licensing terms offered to one firm are” RAND) (Holleman, 2002) (challenging among other points any role for a standards body in resolving disputes relating to patents or licensing terms). IPR matters now represent some 7% of the ICC caseload.

⁵⁸ A licensing program covering a specification terminates the right to arbitration. Such a licensing program must, under the terms of Art 14.9, be notified within two years of the Art 14.1 notification. Art. 14.9 provides that the right to arbitration “shall come into force two years after the [Art. 14.1] notification” unless the pool is formed. In other words, the right is suspended; if a pool is successfully formed, the right is terminated.

⁵⁹ DVB does have a mechanism for suspending and expelling members for failure to pay the annual membership fee.

- ⁶⁰ Similarly, a new member is held to the FR&ND standard in respect to all DVB specifications, including those adopted before its membership.
- ⁶¹ As a practical matter, the match between DVB and ETSI rules does not appear to be perfect. Some DVB members argue that they are excused from ETSI disclosure duties because it is enough for ETSI to know that the DVB specification is covered by its FR&ND rules (absent a notice of withdrawal). This argument is generally not favored by DVB. Moreover, ETSI notes the disparity between disclosures on the ETSI IPR database for DVB specifications and the many thousands for telecoms specifications. See <http://www.etsi.org/WebSite/AboutETSI/LegalAspects/iprdb.aspx>. This may be at least partly attributed to the differences in competitive conditions between industrial sectors.
- ⁶² The form of the circular letter is set out in an annex to Corrigenda and Addenda no 1 to DVB Blue Book A066 rev 1 (Geneva, September 2004) available at www.dvb.org/documents/sb1392%5B1%5D.iprm0430.MHP%20A066r1%20corrigenda%20and%20addenda.pdf.
- ⁶³ The patents essential for digital terrestrial broadcasting (DVB-T) are licensed through MPEG LA, www.mpegla.com; Sun's Java technologies in MHP through ETSI, www.etsi.org; other technologies in MHP through Via Licensing, www.vialicensing.com; advance video coding (MPEG 4(10)) through both MPEG LA and Via Licensing.
- ⁶⁴ Recently, DVB has entered into liaison arrangements with sister standards fora.
- Under these arrangements, DVB and the sister forum may agree to exchange documents, to make normative reference to specifications, or indeed to incorporate materials into each other's documents. Before entering into these liaisons, DVB reviews the IPR policy of its potential partner to determine if there is rough parity with its own. In some circumstances, there has been no difficulty finding equivalence; in others, the sister forum has changed its policy to align with DVB's; and in some cases, DVB has accepted that it cannot expect to bring a sister forum to renounce, for example, an ANSI-based "awareness" policy.
- ⁶⁵ Art 17 MoU.
- ⁶⁶ A chairman of one of the two early ad hoc groups became Chairman DVB; the other, who became the first chairman of the IPRM, now serves as Legal Director DVB.
- ⁶⁷ See discussion previously on Article 14.2 MoU
- ⁶⁸ The policy was adopted by the Steering Board in its document SB 41 (03) 27. It is available at www.dvb.org/membership/ipr_policy/copyright_policy. The discussion of the policy in this article is a summary; reference should also be made to the text of the policy itself.
- ⁶⁹ For example, DVB's MHP specification includes some 70 normative references. Indeed, at its inception, DVB made clear that it expected to build on the standards work of MPEG within ISO; it did not intend to recreate the work completed by another standards body.

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IPR Policy of the DVB Project: Negative Disclosure, FR&ND Arbitration unless Pool Rules OK, Part 2

Carter Eltzroth, DVB Project, Switzerland

ABSTRACT

The DVB Project is a European-based standards forum that for over 15 years has been developing specifications for digital video broadcasting, many now implemented worldwide. Its IPR policy has several novel elements. Part I of this article describes "negative disclosure," the obligation of each member to license IPRs essential to DVB specifications unless it gives notice of the unavailability of the IPR. This approach contrasts with the more common rule (e.g., within ANSI accredited bodies) calling for IPR disclosure and confirmation of availability on FR&ND terms. Other notable features of the IPR policy of DVB are arbitration and, discussed in this Part II, fostering of patent pooling. This article provides a commentary on the DVB's IPR policy and on its application. This Part II also describes the work of the DVB in resolving IPR "gateway" issues when the perceived dominance of technology contributors, notably through control over IPRs, risked, in the view of some members, distorting new digital markets. In two cases, DVB has created a licensing mechanism to dispel these concerns. In addition to the quality of its technical work, DVB's success lies in its novel IPR policy and its ability to achieve consensus to resolve gateway issues.¹

¹[Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Competition; DVB; Intellectual Property Rights; IRP; Patents; Standardization; Standards

FOSTERING PATENT POOLS

One key innovation in DVB's rules governing IPRs is the encouragement it offers to the formation of voluntary licensing programmes covering patents essential to DVB specifications. The benefits of a pool of IPRs essential to a technology are manifest, including a collective royalty likely to be lower than the aggregate of the royalties individually chargeable by rights holders,

and a reduced burden to implementers to discover rights holders and administer payment and compliance.² However at the time of DVB's formation in 1993 it was rare for a standards forum with objectives, and a membership, as broad as DVB's to tie its technical work with licensing regimes. This was due in part to a prevailing notion based on competition law against a link between standards setting and IPR licensing,³ and a general ambivalence towards collective licensing regimes.

DVB's explicit reference to voluntary licensing regimes was then a relative novelty. This section discusses the text on pooling set out in the MoU. It then presents the principal tools used by DVB to foster pools: the patent declaration process, forum for exchange of views on terms and some recent developments. It also describes briefly the resulting pools.

MoU's Text on Voluntary Joint Licensing Programmes

Article 14 establishes criteria for the elements of a licensing regime covering IPRs essential to a DVB specification. Section 14.9 of the MoU provides,

14.9 For any specification approved by the Steering Board clause 14.7 of this Article shall come into force two years after the notification referred to in clause 14.1 unless by such date at least 70 percent of all Members or their affiliated companies holding IPRs which have been identified as being necessarily infringed when implementing such specification and subject to the undertaking for licensing pursuant to clause 14.2 (but excluding Members or their affiliated companies, all of whose IPRs were subsequently unavailable under clause 14.3) have notified the Steering Board of a voluntary agreed upon joint licensing programme regarding their identified IPR for such specification.

This provision defines the elements of a patent pool acceptable within DVB. These are conditions which rights holders are held to satisfy in order successfully to avoid arbitration under article 14.7. A pool is a "voluntary agreed upon joint licensing programme", confirming the voluntary

nature of participation by generally commercial actors in its formation, setting of terms, and functioning. To satisfy DVB's criteria, the pool must include "at least 70 percent of all Members or their affiliated companies holding [essential] IPRs". This was intended to ensure that the patent pool had a "critical mass" of patents available for licensing, making the pool attractive as a "one-stop shop".⁴

Article 14.9 speaks of "70 percent of all Members or their affiliated companies". The calculation of the 70 percent is to be undertaken without regard to the "Members or their affiliated companies ... whose IPR were subsequently unavailable under clause 14.3". This is meant to address the concern that the pool could be completed, while the second window, under article 14.3, for notice of IPR unavailability is still open. The parenthetical text makes clear that under the circumstances where IPR previously identified has been withdrawn during the second window, its holders are not to be included in the calculus of whether the 70 percent has been satisfied.⁵

It could be argued that a more effective provision would have required a threshold based not on a percentage of participation by members but on a number of IPRs. There are, however, several reasons favouring DVB's approach. Most notably, a "percentage of members" would be far more easily measured than a number of IPRs. Discovering the universe of IPRs would require a patent search and its results may not be certain. The search may reveal holders who are not members of DVB and not willing to join a pool. As a result an outside actor could frustrate a good-faith attempt by members to form a pool. Overall, the MoU's criterion offers a more acceptable bright-line test for deciding whether the right to arbitration has expired.

Moreover, the percentage of members is sufficiently high to offer, in most cases, the benefits of pooling to implementers. (Indeed, the 70 percent test could encompass a far greater percentage of IPRs ultimately found to be essential to a specification.) In addition, there is little risk that holders of numerous essential patents would sit out the pooling process because smaller players might conclude that they cannot complete a commercially viable pool and abandon the effort (and so expose all holders to the risk of arbitration).⁶ At the very least, a pool based on a high percentage of members provides a true “one-stop shop”, reducing the cost otherwise incurred by implementers of searching out holders and obtaining licences.⁷

In the calculation of the percentage, the member or affiliated companies are those “holding IPRs which have been identified”. Similarly the notice of pool completion, delivered by pool participants, to the Steering Board is “regarding their identified IPR”. The language on “IPRs identified” has several implications. First, it confirms that the formation of pools contemplated by DVB is based on actions of IPR holders: the pooling process is not intended to include DVB members who do not hold essential IPRs.⁸ Second the text suggests that a DVB member could identify essential IPR for inclusion in the pool, while holding back other IPR either withdrawn under article 14.1 or article 14.3, or to be subject to the generalised FR&ND regime. In practice however the licence offered by a pool covers all the essential IPRs held by each participant, whether listed at the time the licence is first issued, or added later through review of the participant’s portfolio or when a patent is subsequently issued.⁹ Finally, the reference to “identification” serves as the basis for one of the key

tools for fostering pooling: the declaration process for essential IPRs.

Article 14.9 provides that members satisfy the test when they have “notified the Steering Board of a programme”. While DVB prefers a “one-stop shop”, it recognizes that a single programme may be impractical. For example, as technology grows more complex, it is not unlikely that several pools could cover IPRs essential to a specification. This would also be the case also for normatively-referenced materials. Also more than one licensing administrator may compete for a particular pool. While this may result, at least for a time, in more than “a [single] programme”, competition among pools may lower royalties for implementers.¹⁰

The right to arbitration under article 14.7 is terminated when pool participants notify the Steering Board of their patent pool. To be effective, the notice must be given within two years of the notification, issued pursuant to article 14.1, opening the “90-day window”. Two years has been regarded a reasonable time for completing a pool.¹¹ However, the time may not be sufficient as specifications increase in complexity, and as rights holders are drawn from a number of industries, some not traditionally players in broadcasting market.

DVB’s Tools for Fostering Pools

Using Article 14.9 MoU as a foundation, the DVB has created tools to foster the formation of voluntary licensing programmes. The tools are designed to address two areas where there could be gaps in the process to form or to complete a pool: at the beginning, to encourage the launch of the pooling effort by rights holders, and at the end to provide the input of the licensee community to the terms proposed by the pool.

Launching Pools

First, as part of its “fostering” process, the DVB developed a mechanism to “kickstart” the pooling process. Implementers of DVB technology have of course an interest in knowing the costs of introducing DVB products, including the royalties (and other, non-economic terms) of the essential intellectual property rights. On the other hand, there may be insufficient incentives to rights holders to disclose these terms or to form a pool. Their reticence could be the result of several factors. First, a rights holder may simply not know its patents essential to a DVB specification: its contribution within DVB could have been based on the prospect of producing DVB products in a standardised market, without consideration of exploitation of its IPR portfolio. Moreover, the rights holder would prefer not to devote resources to identifying its essential IPR – often a process costly in internal resources and in outside expertise – until it is certain that there will be a viable market for implementations. In addition, there may be no rightsholder which clearly holds the preponderance of the value in intellectual property in a specification and so would have the incentive to form a pool.¹²

In response to this perception of (at least temporary) market failure, the DVB created a mechanism to encourage the first step in pool formation. In its present form, the mechanism allows a company, believing it holds IPRs essential to a DVB specification, to submit, confidentially, a declaration to an independent patent expert named by DVB. Its declaration can identify a single claim in a patent which “reads on” the specification. In other words, the declaration would allow the conclusion that a conformant implementation would necessarily infringe the rightsholder’s identified patent.

The patent expert undertakes a review of the declaration limited to the assertion of essentiality; the review does not include an assessment of the file history or related prior art. (The expert may then conclude that the declaration describes an essential patent. The expert may require further information from the declarant. The process is confidential so the expert’s conclusions in respect of a declaration, successful or otherwise, are not made public.) The successful declarants are then invited by DVB to meet together to take the next steps in forming a pool.

DVB’s declaration process is a low-cost method for launching a pool. The declarants have only to identify a single successful claim to be able to pass to the next stage in the pooling process. At this next stage, they can (and without DVB’s involvement) conduct a further review of either other’s claims; submit further patents for review by their own outside expert; name a licensing administrator; and complete formation of the pool.

DVB has used this process in two “campaigns” to encourage the formation of pools. The first occurred shortly after the adoption of the IPR Amendment and the completion of work on DVB’s initial transmission standards. This resulted in the formation of a pool covering IPRs essential to the DVB-T specification for digital broadcast transmission.¹³ A second campaign covered MHP and other, later specifications. The MHP pool has recently completed its formation. It complements the arrangements, managed by ETSI, for the licensing of the java components of MHP and for conformance testing.¹⁴

Based on the experiences drawn from the DVB-T and MHP programmes, the DVB is attempting to move away from “campaigning” as a means to promote pool

formation. In 2005, it announced a more streamlined, “routinised” process for submission of declarations. As specifications are adopted by DVB, rightsholders are invited as a matter of routine, without an explicit call, to declare their essential IPRs to the independent patent expert.

Forum to Review Pool Terms

As a second, key element of its process to foster the completion of “voluntary agreed upon joint licensing programmes” under article 14.9 MoU, DVB provides a forum for an exchange of views of the terms offered by rightsholders. The discussion is generally limited to meetings of the IPR Module, but it can spill over elsewhere within DVB, including to its Steering Board. Here the leading members, or the administrator, of a patent pool set out the terms proposed to be offered for licensing IPRs essential to a DVB specification. Other participants in these meetings offer their views in response to these terms. At times, potential implementers may wish to remain anonymous and may put, on a confidential basis through the leadership of the IPR Module, specific questions to pool participants.

This is a structure perhaps unique to DVB. It allows patent pools to test their proposed terms before those likely to implement the relevant DVB specifications. It is important, however, to note that the forum is designed to promote an exchange of views on licensing terms; it is expressly not a negotiation session between rightsholders and the licensee community.¹⁵ The forum is available until the pool starts its licensing programme, that is generally when there is no longer any controversy on its terms.¹⁶ That point can be marked by a decision of the IPR Module when it notes that “it

cannot conclude that the terms offered [in respect of licensing IPRs essential to a DVB specification] are other than fair, reasonable and non-discriminatory”. The IPR Module does not make a more definitive statement: it does not purport to make an explicit finding that a licensing programme meets the requirements of FR&ND.

The IPR Module has served as a forum for rightsholders and implementers for the licensing programmes based on the DVB-T and MHP specifications. As DVB specifications increasingly make normative references to specifications developed in other standards fora, the IPR Module has also addressed the terms of non-DVB specifications. For example its members have considered the terms offered for the pools for patents essential to specifications developed for advanced video coding, MPEG 4 (10).¹⁷ The exchange of views among rightsholders and implementers has at times had a significant impact on licensing terms. For example for the MPEG 4 (10) and MHP licensing programmes, members of the IPR Module were able to make licensors aware of the diversity across the European Union of business models, and service delivery platforms, for which terms as originally proposed were inapt.

As a forum, the IPR Module has served as a useful tool for fostering programmes for licensing DVB patents. This role has arguably become more significant since the time the IPR Amendment was first adopted by DVB. The DVB had admitted new players to its membership, many of which lie outside the profile of established players in broadcast markets. Some had different licensing expectations, for example based on their background in different, but now converging industries. Others were new entrants into these technology markets, without a deep experience in licensing.

As a result the exchange of views can often become quite robust. At the same time, the business model for licensing for even established licensors has changed. Consumer electronics manufacturers have generally borne the bulk of royalties for DVB implementations. However, rights holders are increasingly looking to service providers, including broadcasters, to bear a share of the royalty burden. The IPR Module provides a forum to rightsholders to explain this shift (and to the service providers to contest it).

Within the public forum offered by the IPR Module, the discussion can become vigorous and participants call on a variety of persuasive and rhetorical skills to advance their viewpoint. This is perhaps inevitable but is markedly different than the tactics typically used in licensing negotiations. Rights holders find themselves in a new environment. At the same time, some DVB implementers consider the forum to be unsatisfactory because of the asymmetry in information between rightsholders and the licensing community. Most notably, potential licensees believe that they lack, for purposes of discussion within the IPR Module, precise information on the patents which the pool participants will seek to license.¹⁸

Recently the DVB has begun to consider further tools to correct this asymmetry. In order to help in the discussion of the MHP licensing programme,¹⁹ DVB in 2006 made a further call for declarations of essential IPR (where the declarations would be made public); took steps for a limited patent search; and reviewed the market use of the MHP specification to determine whether some dormant functionalities could usefully be excluded.²⁰ In 2007 the European Commission expressed in a letter to DVB its disquiet over the MHP programme and

the risk that the issues for MHP – delays in completion, problematic terms – could arise again for the programme in formation covering DVB-H technology. In response to the letter and to the concerns prompted by MHP, the DVB has put into practice a set of measures, including an earlier start to pooling activity by soliciting confirmation from technology providers of a willingness to consider pooling; information meetings; monitoring of pool formation and when required provision of technical support to backstop progress; and use of peer review to assess assertions of essentiality.²¹

The tools developed by the DVB Project – declarations of essential IPR to “kickstart” the process of pool formation, a forum to discuss licensing terms – are perhaps unique among standards fora of DVB’s size and significance.^{21a} The process has helped launch the DVB-T and MHP programmes and the exchange of views among participants has often been central to the completion of licensing regimes tailored to the market realities of implementers of the specifications.

GATEWAY ISSUES

The IPR policy of the DVB Project was a significant advance over the rules generally prevailing in other standards bodies. As discussed above, DVB’s policy generally contemplates that the licensing arrangements are completed after the standard is set. This fits within the view of a good portion of DVB members that believe that the commercially obvious sequence should be: setting a standard, assessment of market prospects, review of portfolio for essential patents, participation in licensing scheme. DVB’s article 14 MoU provides comfort

that there is generally no need for early disclosure because in any event the DVB member has promised to grant FR&ND licences.

In some cases in DVB's experience, however, the concerns raised by an IPR position (or other gateway issue) may be clearcut from the outset. In order to address these concerns, DVB has chosen to proceed to an early assessment of the issues, and a resolution to mitigate the market risk represented by the IPR ownership or other element of control. This process has been undertaken twice: first, to address the risk that conditional access technologies, owned by leading entities in analogue pay broadcasting, could use their position to establish dominance in digital markets. And more recently, the DVB structured, for its Multimedia Home Platform, a conformance testing and licensing arrangement to accommodate implementers concerned about contribution of Sun Microsystems Inc and its unique licensing position.

DVB's "Conditional Access Package"

At the inception of DVB, it was commonly believed that the early adopters of digital technology for broadcasting would be Europe's pay television services. These services, notably Canal+ in France, BSkyB in the UK and FilmNet in northern Europe, had already demonstrated a willingness to exploit new technologies, such as transmitting to households by satellite, scrambling content, creating an installed base of set-top boxes, and maintaining customer service centres.²² DVB pushed forward its work on a satellite transmission standard, DVB-S, in order to accommodate their interest in commercialising such digital services.²³

At the same time, it was claimed that the pay broadcasters would enjoy a first mover advantage which would skew future digital markets. These entities, vertically integrated from content creation to delivery to the household, were perceived to enjoy in addition a form of natural monopoly over their respective national markets. One leading operator, BSkyB, had demonstrated that it could establish a commercial advantage, and face down a rival service, by exploiting technology which differed from the choice of regulatory authorities.²⁴ The concern among some DVB members was that the European pay services could leverage their relative strengths in current markets to dominate digital broadcasting to the detriment of viewers. One central focus of these members was the control over pay households, and the components of the "digital chain", exercised by pay services by virtue of conditional access.

Conditional access is a central feature of pay television operations: it is the encryption or scrambling technology which allows access for the viewing of content only to authorised consumers. Unauthorised access to content by defeating (or "hacking") this technology is a form of piracy and can result in the loss of revenues and other commercial damage to pay broadcasters. It is often a central contention of pay services that they should control the elements of conditional access, and the related infrastructure, in order to reduce the risk of piracy.

The desire for control over the technology can, however, be construed by competitors as evidence of intent to exclude others from broadcast markets. In addition, at a time when the ambition of DVB was to standardise the technologies for digital broadcasting, it was, for some, difficult to understand why a key element had to remain proprietary, outside the scope of an open,

inclusive standards process. The entrenched pay broadcasters, it was asserted, would act as gatekeepers to digital markets and frustrate the interest of European viewers for greater choice in television. There were practical aspects as well: at the level of broadcasters, other technical services would be tied to encryption, including, within the digital chain, compression, multiplexing, uplinking and descrambling in the household. Each broadcaster newly entering digital television markets could not be, it was argued, expected to replicate these facilities; it would have to have access if it was to participate in the market at all. Moreover, at the consumer level, if service were vertically integrated, each with its proprietary encryption system, this could mean that the household would have to have multiple set-top boxes in order to be able to receive more than one service.²⁵

The DVB took upon itself the objective to resolve this gateway issue. After much debate spanning the better part of a year, there was agreement on a series of measures falling within an overall compromise known as DVB's "Conditional Access Package".²⁶ The package included the completion of a Common Scrambling Algorithm which was to be licensed on terms acceptable to DVB. Work on the algorithm was not strictly considered a work item within DVB. Instead, because of the secrecy considered to be inherent for conditional access, work was undertaken by four DVB member companies that were in the forefront of scrambling technologies. Three were affiliates of the pay TV services described above. While standardisation generally requires publication or otherwise making available a standard, the Common Scrambling Algorithm was confidential.

As part of the resolution of the gateway issue, the companies developing the

Common Scrambling Algorithm offered licensing terms which included distribution under the custodianship of a neutral body, ETSI; a nominal royalty (in exchange for the licensee agreeing not to assert its rights against the companies and other licensee); and a process which granted access to the algorithm to manufacturers, conditional access providers, and others. It has also provided for continued confidentiality of the algorithm and for safeguards against piracy.²⁷ The arrangement has been very successful, with distribution of the information on the common descrambling system distributed to 245 companies and scrambling technology to 99 companies.²⁸

The Common Scrambling Algorithm, and the related distribution agreements, were important elements of a "Conditional Access Package" which helped to diffuse concern that the leading pay television services, and their conditional access affiliates, would skew the digital markets at their inception. As noted elsewhere, the DVB generally accepts that the licensing framework for a DVB specification (for example pooling of essential IPR) will be completed after adoption of the specification. Here, because of the concerns, already present at the time, about the market position enjoyed by key players, DVB members called for the algorithm and the licensing arrangements to be completed contemporaneously.²⁹ After adoption by DVB of its comprehensive "Conditional Access Package", the solution was ultimately taken up by EU institutions as the TV Standards Directive. This sequence underscored the recognition by regulatory and legislative authorities that commercial actors—operating in a framework such as DVB's with full industry participation—were well placed to find a solution for a perceived market distortion.³⁰

Java Contribution to the Multimedia Home Platform

At the time DVB began work on the Multimedia Home Platform (“MHP”) in 1997, DVB was called once again to address gateway issues. The concern was comparable to that raised by the Common Scrambling Algorithm: for MHP the risk was the control exercised by a lead contributor over its technology to be incorporated into MHP and its perceived ability to influence MHP markets and markets using the same technology. The technology was Java contributed by Sun Microsystems Inc; Sun was a proponent of its Java technology in a number of other markets. Sun’s contribution represented, by some calculations, well over the half the technology value in implementations. Moreover Sun already had a reputation within standards bodies for the complexity of its licensing arrangements. A review of Sun’s licensing policy, and the arrangements to create a licensing regime acceptable to DVB members, took place while DVB progressed the technical specification. The licensing structure ultimately adopted was built on the conceptual framework for the Common Scrambling Algorithm.³¹

The Multimedia Home Platform defines a generic interface between interactive digital applications and the terminals on which those applications execute.³² This interface decouples different providers’ applications from the specific hardware and software details of different MHP terminal implementations. It enables digital content providers to address all types of terminals ranging from low-end to high-end set top boxes, integrated digital TV sets and multimedia PCs. MHP supports many kinds of applications including electronic programming guides, information services (“super

teletext”, news tickers, stock tickers), applications synchronized to TV content (score cards, local play-along games) and e-commerce and secure transactions.

The core of MHP is based around a platform that includes the Java virtual machine as originally specified by Sun. A number of software packages provide generic application program interfaces (“APIs”) to a wide range of features of the platform. MHP applications access the platform only by means of these specified APIs. As a result, the Java virtual machine allows applications written in Java the ability to run on a number of operating systems without the need for a software developer to write for (or “port” to) multiple systems.

For these reason, the choice of Java technology was attractive to DVB. At the same time Sun’s policy of “write once, run anywhere” had brought it to impose rigorous licensing terms including a prohibition against a licensee’s implementation of variations for the Java specification and regime of conformance tests including test suites developed by Sun. Sun has its own process for evolution of its specifications and for the extension of its core Java technology to other platforms. Faced with this complex policy, there was uncertainty within the DVB Project on whether Sun, although a DVB member, could satisfy the test of the MoU for licensing IPRs essential for the forthcoming MHP on terms fair, reasonable and non-discriminatory.

The work of setting a standard for the Multimedia Home Platform largely followed the normal process for setting specifications adopted by the DVB Project: description of the commercial requirements (eg desirable functionalities) by the Commercial Module, development of the specification by the Technical Module, adoption by the Steering Board and delivery to the

recognized standards body, here ETSI. At the same time, there were departures from DVB's normal process: first the formation, as part of the technical process, of an MHP Experts Group charged with reviewing the test applications comprising the MHP Test Suite for conformance testing. Second, while the MHP specification was being completed, the IPR Module, and ad-hoc groups within DVB, were tasked with examining and resolving IPR and related issues because of concerns about Sun's licensing policy.³³

Conformance Testing

The DVB had earlier not favoured a conformance-testing regime, largely out of concern that it could be subject to the control of a few market players. For this reason, the use of the DVB mark is granted by the project office of the DVB Project, based solely on the submission of a certificate by the implementer.³⁴

For MHP, however, the specification was perceived to be so complex that conformance testing would be needed to ensure a broad market in interoperable consumer equipment. In other words, the objective was to avoid the risk that variant implementations could divide the European (now world-wide) market, complicating the ability of service providers to reach as many installed MHP consumer units as possible. A related concern was that if there were no conformance-testing regime, MHP applications would need to be written (or ported) to multiple MHP platforms.

While conformance testing was a suitable solution, there was concern that Sun, as lead technology provider, would be providing the majority of the test applications for the MHP Test Suite. Thus, it was argued, the MHP implementer would be using a

test suite biased toward Sun technology. A series of safeguards was developed: As noted above, an MHP Experts Group was named to approve the MHP Test Suite, based on submission of test applications by Sun and other providers. This experts group was mandated to refuse "any test application that does not conform to the MHP specification or is more restrictive ...". Other detailed rules and procedures were established for the experts group to ensure genuine independence of test applications and allowing evolution of the MHP specification. Further safeguards lie in the relative ease in the process of conformance compliance (including self-certification of successful completion of the test suite (subject to a challenge procedure)); the naming of ETSI as a neutral custodian to administer the certification process; and the availability of the feedback mechanism under which a questioned application can be further assessed for its compliance with these rules.³⁵

Other Licensing Issues

Early in the development of the MHP specification, there was uncertainty on how Sun's own IPR policy could be reconciled with the DVB's on FR&ND licensing, notably because of Sun's prohibition against variations of Java technology and against supersetting; its insistence on conformance testing; the special role of the "Java Community process" in evolving the standard; etc. Other notable issues included constraints placed by Sun licensing terms on the ability of the clean room implementer to implement, test and market its implementation; the appearance of discrimination in the licensing and other arrangements which, it was argued, give a competitive advantage to Sun's direct licensees; and the offer in Sun's patent

licence agreement of royalty-free licensing for so long as the licensee did not bring a claim against another implementer on the basis that it has infringed the licensee's own essential IPR or against Sun for inducing an implementer to infringe the licensee's essential IPR. One effect of this latter provision (or "covenant not to sue") would be to encourage the roll-out of MHP equipment on an entirely royalty free basis.³⁶

The IPR Module provided a forum for Sun and other DVB members to exchange views on licensing terms. The discussion were lively: the participants included outspoken advocates of open source solutions and DVB members already offering competing middleware products. During the months of discussion Sun's proposed licensing terms accommodated many of the concerns.³⁷

Recent Developments

Since the time of the launch of the MHP compliance testing and licensing programme, other companies have offered their own agreements for licensing their test applications included in the test suite.³⁸ At the same time, the programme is no longer royalty or charge free. Rightsholders other than Sun have formed a licensing programme assessing royalties on devices and services using MHP technology. Moreover, Sun has begun to assess a fee for use of its test applications in newer versions of the MHP Test Suite.³⁹

In commercial markets, MHP's success has been mixed, attributed to the difficulties in completing the MHP patent pool, and the associated fees; the entrenched position of competing middleware providers; and doubt as to the attractiveness to broadcasters of the interactive services. In addition there has been some uncertainty as European

institutions considered whether to impose MHP as a mandatory standard to ensure interoperability within the European Union. Nonetheless, the MHP specification has enjoyed success in diverse territories, such as the United States, and in sectors outside of broadcasting. For this purpose, DVB and its partners have developed a Globally Executable MHP ("GEM"), a version of MHP stripped of some elements designed for classic DVB territories, to which can be added "functional equivalents" corresponding to local broadcast environments. A version of GEM has been adopted by the US cable industry as its bidirectional set-top box thanks to a liaison of DVB with CableLabs. Similarly, the Blu-ray Disc Association has, under a liaison with DVB, included a version of GEM for its storage media devices.

The cooperation between DVB and sister standards fora, such as CableLabs and Blu-ray Disc Association, has raised the concern that the sister forum – which is called upon to set the specifications for functional equivalents – may not require a licensing policy comparable to DVB's. There could arguably be a failure of reciprocity: while DVB members would be obligated to grant licenses in respect of the core GEM elements on terms which are fair, reasonable and non-discriminatory, the members of the sister forum may not be similarly bound for the "functional equivalents". In addition, the sister standards forum may not recognize the importance of conformance testing for implementations offering the range of functionalities as MHP. For these reasons, DVB adopted a procedure for the purpose of assessing whether the members of the sister standards forum undertake to grant FR&ND licences to essential IPR.⁴⁰ This process of reviewing the IPR policy of sister fora has been extended beyond

GEM partners to other fora with which DVB cooperates in an environment of converging technology.⁴¹

CONCLUSION

The DVB Project has developed a number of novel, unique rules and mechanisms as part of its policy on intellectual property rights essential to its specifications. These include its rule on “negative disclosure”, the fostering of patent pools, and the use of a permanent subgroup within DVB devoted to IPR and other legal issues. In some respects, the DVB solutions are arguably superior to the approaches adopted by other standards bodies.

DVB’s “Negative Disclosure”

The IPR policy of the DVB Project requires each of its members to grant licences to its IPRs essential for a DVB specification on FR&ND terms unless it gives notice that it unable to do so. In contrast, many standards bodies call for disclosure of essential patents, together with confirmation from the rightsholder of its willingness to grant FR&ND licences. In this article, this approach is called “affirmative disclosure”.⁴² Because this is the prevailing approach, the issues raised by “affirmative disclosure” are fairly visible and highly contested. A complex matrix of issues has developed around the notion of disclosure. Among these issues are:

Whose Duty under “Affirmative Disclosure”?

Who bears the duty to disclose? At times there is no explicit duty imposed on the

participant in the standards process.⁴³ Rather the rule sets out a process *undertaken by the standards body* when it becomes aware of the possibility of essential IPR. The result is that it is unclear whether the participant/patent owner has a duty to notify the standards body. It is also unclear, when it is the rightsholder’s duty to disclose, if there is a penalty for its failure to disclose (for example, requiring the non-disclosing holder to license on a FR&ND or royalty-free basis) and whether this failure can be excused (for example, because there is no obligation to conduct a search within the company’s portfolio).

Moreover, under regimes which favour affirmative disclosure, a rightsholder is frequently questioned on the timeliness of its disclosure. There are opposing practical considerations on timeliness: Some believe that a declaration of essential IPR should be made (together with a statement of licensing policy) during the standard setting process so that the membership of the standards body can make an informed choice, based on both technical and commercial considerations, among technologies to be selected for the standard. On the other hand, others argue that disclosure is only meaningful when the standard has been set and the rightsholders can usefully devote resources to identifying and declaring essential IPR.

Management of “Affirmative Disclosure”

A further issue raised by the affirmative disclosure approach is the management of disclosures. From a practical viewpoint, the sheer volume of disclosures may overwhelm the resources of the standards body. For example, as of November 2006 ETSI had over 14,000 declarations.⁴⁴ Apart

from satisfying formal requirements, how should a standards body assess the quality of disclosures? One study sampled the disclosures made as part of the process for setting standards for 3G cellular technology and estimated that “nearly 80% of the patents declared essential are probably not essential for practicing the standards”.⁴⁵ Typically the standards body is not called upon to confirm essentiality.⁴⁶ And the mass of filings may be beyond the capacity of all but the largest implementers to assess the claims and to create administrative systems for obtaining licences. In other words, excessive declarations (matching excessive patent filings) may represent a barrier to entry for new entrants into these markets.

Moreover, the typical standards body is ill-equipped to test the promise of a declarant that it is willing to grant licences on FR&ND terms. Here again what if the declarant’s promise is challenged? Or if further, specific details of its licensing policy are requested? A standards body would not be well placed to confirm that the declarant’s terms fall indeed within FR&ND. And if the question was presented to the body’s membership for resolution while the standard is still in development, the risk is that any decision, for example between the licensing policies associated with alternative candidate technologies, would delay completion of the standard.

For these reasons, the benefits of “affirmative disclosure” are less than clear and the time devoted to a debate over the finer points of the declaration process is arguably misplaced. In the midst of these often doctrinal discussions, the risk increases that participants will adopt gaming strategies with respect to their disclosures and their challenges to the disclosures of others. A policy favouring “affirmative disclosure”

could be disruptive of the standards process.

Is Negative Disclosure Better?

In contrast, DVB’s policy of negative disclosure offers in many respects a superior mechanism. Within the formal rules of DVB, no disclosure is required, but the implementer has nonetheless the certainty that IPRs essential to a specification, owned by a DVB member, will be available on FR&ND terms. This provides greater commercial certainty that a process riddled with the issues described above.

Paradoxically, thanks to its process to foster patent pools, DVB provides a disclosure mechanism which avoids many of the pitfalls of “affirmative disclosure”. The pooling process subjects a declaration to initial review by the independent patent expert and then to the scrutiny of other potential pool members. The patents which have passed these initial filters are in turn reviewed by the licensee community. The result is not the thousands of patents collected for example in the ETSI process, but a manageable number which in turn can be administered as part of a DVB patent pool. DVB’s negative disclosure policy, in contrast with the more common-place regime of affirmative disclosure, has been shown to offer a greater level of accurate disclosure of IPRs essential to specifications.

Patent Pooling

A second novel feature of DVB’s IPR policy is the early emphasis on fostering pools covering patents essential to its specifications. This activity is an extension of the provision in Article 14.9 of DVB’s Memorandum of Understanding terminating a right to arbitration over licensing

terms if a critical mass of patent holders forms a joint licensing programme. At the time this approach – involvement by a standards body to trigger the start of the pooling process, forum within the body to exchange views on licensing terms – was quite advanced, perhaps on the fringes of acceptable behaviour, when first adopted in the mid-1990s.⁴⁷ It has resulted in pools for two key DVB specifications. It has undoubtedly served as an impetus for other programmes which have been launched without the initial shove from DVB.

The pooling process is not free of criticism. One lead concern is the information available to the market about the number and quality of pooled patents. As noted above, the participants in pool formation are those which have demonstrated essentiality as to a *single* claim in a *single* patent. The true depth of a pool, the number of essential patents, may not be known until well after the pool is operational. The market could then perceive a pool of, say, seven participants as offering seven patents only.⁴⁸ There is arguably an asymmetry of information, disfavours the licensee community which is not able to assess the value of the patents for which it is asked to take a licence. To correct this imbalance, DVB has recently explored the use of other tools to help inform the discussion on licensing terms. These tools include for example a further call for non-confidential declarations of essential IPR; a limited patent search; giving greater prominence to the arbitration remedy; and a re-examination of a specification in the form implemented, with the objective of identifying superfluous (and excludable) functionalities. Other tools could be contemplated to assist generally the fostering process, including the identification of best licensing practices; model forms of licensing; safe-harbours

for terms as comporting with FR&ND; and vigilance to correct abuses and other deficiencies within pools.⁴⁹

Permanent Lawyers' Group to Resolve IPR, Other Legal Issues

Another feature of the structure of the DVB Project is the place given to review of IPR and legal issues in a separate IPR Module. The IPR Module provides a number of useful services to the DVB membership: First it serves as a sounding board to discuss and resolve IPR issues arising out of DVB's Memorandum of Understanding. As questions of interpretation are raised as to the meaning and application of Article 14, a member, or the Steering Board or other DVB subgroup, can directly address the IPR Module. This mechanism can be contrasted with the experience reported elsewhere, when a rightsholder could claim to be uncertain as to its duties under the rules of a standard body.⁵⁰

Second, the IPR Module has served as the focus of one of the leading tools used by DVB in its fostering of formation of patent pools. As noted elsewhere in this article, the DVB offers a forum for exchanges of views on IPR terms offered by rightsholders. The IPR Module is a permanent structure within DVB to channel those exchanges. By having a subgroup dedicated to legal issues, it reduces the risk that the experts in other subgroups within DVB will be distracted from their core activities of developing commercial requirements or setting technical specifications. It also reduces the risk that lawyers will think it suitable to offer contributions to these other subgroups. The IPR Module is a useful "lawyers' corral".⁵¹ This structure – focusing legal issues into a single specialised subgroup – has allowed DVB to continue to thrive based on an over-

all sentiment, shared by the membership, of promoting a “community-mindedness”, or good faith approach, to the development of specifications.

The IPR policy of the DVB Project is periodically reassessed in the light of developments in the practices of standards bodies. These developments include most recently the conclusions to be drawn from the *Rambus* cases, the shift in regulatory environment as evidenced by the VITA Business Review Letter, the work within ETSI on its own IPR policy and the issues raised by IPR licensing for 3G mobile technology. This reassessment is also sparked by DVB’s own experience with the fostering of patent pools and the other elements of the IPR policy. For example, the time required to form the MHP pool, and the terms initially proposed for the pool, have led the IPR Module to consider other tools for fostering, such as a “light-touch” patent pool and model agreements. The need for review has been reinforced by the concerns expressed by the European Commission.⁵² There have also been calls to bring the IPR policy more in line with regimes in other bodies, including ETSI, requiring “affirmative disclosure”; or to consider further IPR tools, including a mechanism for voluntary ex ante disclosure of IPRs and licensing terms and caps on aggregate royalties to be specified in the commercial requirements for a specification.

Overall, the record of the DVB’s policy on intellectual property rights, operating for well over a decade, has been good. It provides a measure of legal certainty to implementers that, unless there is a notice otherwise, the IPRs held by DVB members essential to one of its specifications will be available on FR&ND terms. It offers innovative methods to assist in licensing these IPRs, by fostering joint licensing pro-

grammes and, in their absence, compelling arbitration of IPR disputes. The IPR policy has demonstrated its flexibility, under the control of its specialised subgroup, the IPR Module, together with the Steering Board, responding to the influx of new members from different industries and geographies; addressing novel challenges to the launch of DVB markets; and fashioning further tools to encourage availability of patents for the implementation of DVB specifications. The IPR policy complements the success of the DVB’s specifications in world markets; it remains an important legal framework for further innovation.

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pels a holder to monetize its portfolio: that is, by assigning a value to its patents and participating in pools, the holder reduces its ability to defend against claims brought by third parties. Pool formation is inefficient especially as it draws participants from different industries with different business models. Moreover, it is claimed that some pools reinforce dominance, for example when the holders are also implementers in an oligopolistic market. Finally, the benefits of pooling are considerably overstated; some claim: if it were so attractive, why then are there few pools and few commercially viable licensing administrators when technology markets – implementing standards – are thriving?

³ See eg Sony Electronics v Soundview Technologies, Inc, 157 F Supp 180 (D Conn 2001).

⁴ Or at least an important shop. As the pool achieves critical mass, the hope is that out-liers will understand the advantages and join. The need for a high percentage of participation also removes the risk that selected rights holders could seek to side-step arbitration by giving notice of a pool covering few patents.

⁵ The draftsman of the text had perhaps unrealistic expectations of the speed of pool formation (or was overly pessimistic about the time required for standardisation of DVB specifications). Experience has shown that the standardisation process is generally well over by the time a pool is completed. It is possible that the parenthetical reflects the particular timing of DVB's initial specifications and the progress in creating pools.

⁶ The predominant holder might present "gateway" issues, which DVB has demonstrated an ability to resolve separately, for example in the case of Sun's ownership of its Java technology incorporated in DVB's Multimedia Home Platform.

ENDNOTES

¹ I am grateful for the comments to earlier versions of this article offered by Anthony Dixon, Maurits Dolmans, Ruud Peters, Douglas Rosenthal, Stephen Temple, and Adam Watson Brown, by the anonymous reviewers of the International Journal of IT Standards and Standardization Research, and by colleagues within DVB, notably the members of the IPR Module; the remaining errors are my own. The views expressed in this article are my own and are not necessarily those of the DVB Project or of any of its members. This article reflects developments in the DVB generally up to summer 2008.

² There are arguments against pooling: Pools "reify" (give substance to) IPRs which would not otherwise be enforced because the patent has infirmities or the holder would otherwise lack the ambition to pursue infringers. A regime favouring patents, it is claimed, also necessarily com-

- 7 The “percentage of members” test is in fact consistent with the practicalities of pool formation. As discussed below, in order to meet the initial threshold for participation in a pooling process, the patent holder demonstrates, in a “light-touch” essentiality review, that one claim in one patent reads on the DVB specification. It is only after the pool is formed that pool participants devote the resources to identifying all their relevant IPRs and subjecting them to a comprehensive essentiality review. The depth of a pool is confirmed generally after the pool has been completed. A further question lies in the limitation of the test to “Members or their affiliated companies”, excluding in the calculus non-DVB companies. Here the provision is tied to the right of arbitration, which is imposed on members and affiliated companies. In addition, members would not want the expiry of that right to depend on the willingness of non-DVB companies. In any event, DVB has over 250 members across several industries, including the holders of the vast bulk of IPRs essential to digital broadcasting.
- 8 Outside of DVB, market dynamics may result in licensee-driven pools. See for example Guidelines, *supra* Part I, n 19 at para 231 on mixed participation pools.
- 9 Compare the reference to “identification” to the practice of some rights holders to offer a licence covering “Essential Patent Claims” without specifically identifying the patents.
- 10 Any assessment of benefits from a single programme or multiple pools is likely to be fact specific. If the pools are complementary, aggregate royalties may be driven up.
- 11 As noted above, the MoU originally called for the notice of pool to be made no later than October 1998.
- 12 A further reason could be based on a commercial judgment which would violate the good-faith foundation of standards work: A holder could delay revealing its terms based on its (cynical) conclusion that it would work to its advantage to reveal terms only when the installed base of devices using its technology is sufficiently large that the standards body would find it difficult to recast the specification to exclude its onerous IPR.
- 13 The pool is now administered by Sisvel, www.sisvel.com. In that first “campaign” no declaration was found to describe IPR essential to the DVB-S and DVB-C specifications. In some cases only a single declaration was found to describe successfully IPR essential to a specification. See www.dvb.org/membership/ipr_policy/.
- 14 The MHP pool is administered by Via Licensing, www.vialicensing.com.
- 15 The reticence to avoid outright negotiations reflects the commonly-held (but now perhaps dated) legal position on the limits imposed on standards bodies in respect of IPR licensing. See discussion above.
- 16 In the event of credible issues under competition law, these may be referred to competition counsel.
- 17 Pools of patents essential for MPEG 4 (10) are administered by MPEG LA, www.mpegla.com, and Via Licensing, www.vialicensing.com.
- 18 In DVB’s practice, the economic terms of a pool are frequently publicised before the list of covered patents is made available. Potential licensees therefore do not have a complete view of the technology subject to the licence. Pool participants explain that the list is not available because the form of licence, including the list of patents, is not final until it is certain which rightsholders will participate in the licensing programme. (The economic terms are announced earlier so that implementers can be aware of the IPR costs.) Further, even when published

- the list is incomplete because other patents will be added as their essentiality review is completed or new patents are issued. Finally, rightsholders argue that licensees can be comforted by their promise that all the patents in their respective portfolios, essential to the DVB specification, are covered by the licence even if not disclosed.
- 19 The deficiencies identified by potential implementers in the MHP licensing programme are described in (EU, 2006) (“Several broadcasting stakeholders argue that [without] significant reductions in fees ... it will no longer be cost-effective to use [MHP] technology in Europe [and] multiple standards will be adopted.”) The terms of the Via licensing programme were made available in February 2007. www.vialicensing.com)
 - 20 The controversy surrounding the licensing terms of MHP also sparked a call for a general review of DVB’s IPR policy.
 - 21 Commission letter, *supra* n 4; DVB, DVB Takes Steps to Reinforce IPR Policy: MHP Patent Pool Experience Prompts the Addition of New Procedures to Safeguard IPR Process, press release (Geneva, 30 Nov 2007).
 - 21a The IEEE announced in December 2008 a collaboration with Via Licensing to foster intellectual property licensing programs for IEEE standards. <http://standards.ieee.org/announcements/patentlicensingprograms.html>.
 - 22 The market structure for pay TV in Europe differs in several respects from the American model. In the US, the cable or satellite operator owns not only the network but also other elements of the infrastructure, including the set-top box and access control. The content provider or “cable channel” typically does not have a direct relationship with its viewer; the customer is “owned” by the cable operator. In Europe, as pay services were introduced in the 1980s, they found they could control all the infrastructure elements, either by by-passing cable (Sky by satellite, Canal+ by use of terrestrial frequencies) or through indifference of cable operators (FilmNet). Since that time, the market structure for EU pay services has considerably evolved.
 - 23 The pay broadcasters had already indicated that they were prepared to delay their commercialisation of digital services until DVB had completed DVB-S.
 - 24 In a nutshell, Sky Television was able to achieve a first-mover advantage by introducing its satellite broadcasting service using established “off-the-shelf” analogue technology (PAL transmissions from FSS satellites to advanced consumer satellite dishes). Its competitor at the time, BSB, chose to wait for a newer technology, DMAC transmitted over DBS satellites. While DMAC was the choice supported by regulatory authorities (see the discussion on DMAC, *supra* Part I, nn 13, 14 and accompanying text), BSB was not a commercial success and it ultimately merged with Sky (forming today’s BSkyB). The debate over the competitive position of pay broadcasters was heated but a more comprehensive discussion is not required for this article.
 - 25 The European Commission speaks of this history of “wide-spread concerns regarding the potential impact ‘gatekeepers’ on media pluralism” but concludes that “the worst fears of certain commentators have not been realised so far” thanks to the Commission’s application of its merger policy, the TV Standards Directive, *supra*, Part I, n3, and other measures (EU, 2007)
 - 26 The DVB’s Conditional Access Package was comprised of: (1) recognition that there could be two routes to deliver encrypted digital TV reception: Simulcrypt (multiple users of a single conditional access (“CA”) system) and Common Interface (receivers allowing several CA systems, for example

- by exchange of smart cards); (2) a Common Scrambling Algorithm (discussed in the text); (3) Code of Conduct for access to installed bases of set-top boxes; (4) a Common Interface specification; (5) anti-piracy recommendations; (6) licensing of CA technology on FR&ND terms; and (7) transcontrol at cable headends. DVB Project, "DVB Conditional Access Package" (undated); see also DVB, "DVB Agrees Conditional Access Package", press release (Geneva, 27 Sept 1994). Many of the provisions in the Conditional Access Package are reflected in Directive 95/47/EC ... of 24 October 1995 on the use of standards for the transmission of television signals, OJ L 281/51 (23 Nov 1995); the anti-piracy recommendations led to Directive 98/84/EC ... on legal protection of services based on, or consisting of, conditional access, OJ L 320/54 (28 Nov 1998).
- ²⁷ The distribution agreements can be found at www.etsi.org. A DVB Blue Book contains a set of the agreements and an explanatory note (DVB Project, 1996).
- ²⁸ The information on the number of licensees, as of January 2007, has been provided by the ETSI secretariat. The licensing agreements, and the basic structure of activity under a neutral custodian, serve as the basis for the new round of licensing arrangements covering "CSA3", the "third" version of the common scrambling algorithm.
- ²⁹ The chronology is slightly disingenuous: DVB was completing its IPR Amendment at the time of discussions on licensing of the Common Scrambling Algorithm.
- ³⁰ As such, it was an early example of co-regulation: commercial actors working together to establish parameters of conduct, later confirmed by government, to correct the risk of abuse.
- ³¹ Much of the discussion on MHP that follows is taken from (DVB Project, 2003). That document contains virtually all the operational documents for licensing and conformance testing described in these pages. MHP specification was published by ETSI as TS 101 812.
- ³² This and the following paragraph have been adapted from (Vogt, 2000).
- ³³ Competition counsel was also called upon to review the arrangements and to consider claims presented by commentators. His opinion is found at (DVB Project, 2003), item 4.5.
- ³⁴ Generally, the DVB requires that an implementer need only declare compliance with a DVB standard, without the need for type approval. See http://www.dvb.org/dvb_technology/framesets/registration-fr.html. A more intrusive approach – third party certification – is arguably not required for most television equipment because of the discipline imposed by the market: in broadcasting there is a higher threshold of interoperability. The manufacturer of non-compliant equipment is quickly found out.
- ³⁵ The Rules and Procedures of the MHP Experts Group, and its feedback mechanism, are set out in items 4.3.1 and 4.3.4, respectively, of (DVB Project, 2003).
- ³⁶ The other effect, of course, is to deprive a licensee of its right to receive royalty payments for its valuable patent rights. In the DVB process, Sun proposed a novel solution: if the licensee chooses to exercise these rights, and brings an infringement claim, then Sun's patent license agreement terminates and Sun will offer a similar, "back-up" license subject to a royalty not exceeding \$1 U.S. per hardware unit. See (DVB Project, 2003), at item 6.2.
- ³⁷ Sun's terms for the MHP 1.0.x versions can be found in its test application licence (item 5.1.1 *et seq* of (DVB Project, 2003), *patent licence* agreements (*id* at items 6.1.1 and 6.1.2).

- ³⁸ These test application licences are included in (DVB Project, 2003).
- ³⁹ The licensing regime for the MHP 1.1.2 Test Suite is described at www.mhp.org.
- ⁴⁰ The procedure for assessing the IPR policy and conformance regime of a sister standards forum is set out in “Intellectual Property Rights, Conformance Testing associated with the Globally Executable MHP”, item 4.4 of (DVB Project, 2003). GEM liaisons have been concluded as well with the Japanese body ARIB, the USATSC and the Blu-ray Disc Association.
- ⁴¹ DVB’s liaison partners now include, in addition to the GEM liaisons, Alliance for Telecommunications Industry Solutions (ATIS), Digital Living Network Alliance (DLNA), Open Mobile Alliance (OMA) and the Telecommunications Industry Association (TIA).
- ⁴² See *supra* Part I, n 4, for “affirmative disclosure” rules from a cross-section of standards bodies.
- ⁴³ This point is raised by the US Federal Circuit in *Rambus*, *supra* Part I, n 17, as a result of which the FTC had to find a duty grounded on the expectation of participants in the JEDEC process.
- ⁴⁴ <http://webapp.etsi.org/IPR/home.asp>. In addition ETSI was at that time trying to complete recording a further 1988 declarations submitted in June 2006 by a single company. Conversely, a company belonging to several standards bodies will have a “non-trivial” challenge following diverse disclosure obligations requiring “fairly sophisticated systems” for tracking memberships, participations, and rules (Baker, 2006). To the same effect on numbers of submissions to an SDO and “onerous” duty of a patent holder (Taffet, 2006).
- ⁴⁵ See (Goodman & Myers, 2005). The study used the narrow definition of “essential” – patents necessarily infringed from a technical point of view – as adopted by standards organisations. A greater number of patents could be commercially essential. But see (Martin & Meyer, 2006), questioning methodology and suggesting that high number of patents ultimately found to be not essential is due to the practice, eg within ETSI, calling for early disclosure of IPRs for standards not yet finalised.
- ⁴⁶ But see the MicroElectronica dispute, which resulted in ETSI’s removal of a challenged declaration.
- ⁴⁷ Now pooling is touted as an “ultimate solution”; see (Skitol, 2006), recommending “open SDO-sponsored *ex ante* pool creation”. In addition, IEEE is actively taking steps to foster licensing programs covering its standards. See *supra* n 21a.
- ⁴⁸ Alternatively there could be claims that pool participants continue a practice of non-disclosure, for example in violation of ETSI’s disclosure policies. On the other hand, rightsholders may chose to undertake a comprehensive review of essentiality in respect of all relevant patents in their portfolios only once the pool has been completed. Essentiality reviews are expensive and rightsholders give priority to completion of the framework of the pool. Moreover, premature disclosure of patents ultimately shown not to be essential could lead to assertions that the pool is seeking to bundle-in non-essential patents.
- ⁴⁹ For example, attempts to exploit the “strategic value” of IPR once it has been incorporated in a standard; conflicts of interest among pool participants when owners of competing technology; gamesmanship e.g. of those who participate in pool formation without an intention to join when formation is completed; inexperience of some participants and facilitators in the complexity of European markets (diversity of platforms and business models, funding requirements, and regulatory environments).

- ⁵⁰ In *Rambus*, *supra* Part I, n 17, the rightsholder claimed not to be certain as to its disclosure duties (and apparently had no body, such as a JEDEC lawyers committee, where it could seek clarification).
- ⁵¹ The relative lack of (lawyer-driven?) contentiousness within DVB also arises out of a schedule for work items that completes technical issues first, before tackling licensing and other IPR issues. The IPR regimes in other bodies could well require, during the course of specification development, constant reference to lawyers and patent specialists on whether disclosure is ad-
- equate, the declaration correctly describes essential IPR, the terms offered fall within FR&ND, etc. Of course, as DVB experiments with disclosure-based alternatives (for example *ex ante* declarations), the IPR Module is well suited for addressing in a specialised environment the issues identified in the preceding section.
- ⁵² Commission letter, *supra* Part I, n 5. The DVB issued a press release describing its new procedures to encourage patent pools and other measures. DVB press release, *supra* n 21.

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