Chapter 1.19
Standards, Patents and Mobile Phones:
Lessons from ETSI's Handling of UMTS

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ABSTRACT

The impact of patents and patent royalties are a major concern of standards setting organisations. Here we examine the patents filed in the UMTS 3rd generation mobile phone standard, governed by the ETSI IPR policy in response to patent issues faced during the earlier GSM standardization. We contrast firm strategies and policy effectiveness between the GSM and UTMS efforts, and review the potential impact of potential changes to the ETSI IPR policy.

INTRODUCTION

The management of patent royalties has become one of the most problematic and contentious areas of multivendor ICT standardization efforts. While standards setting organizations (SSOs) are organized around a presumption of cooperation toward a shared goal, the increasing role of patents in standards has also increased the divergence of stakeholder interests in standardization, particularly between producers and users of standardized products. Although some SSOs have sought to manage standards-related patents or even ban them entirely, other SSOs seem to be in denial; all three approaches have serious limitations.

In this study, we examine the nature and role of patents in one of the largest ICT standardization efforts of the past decade, that of the Universal Mobile Telecommunications System (UMTS), a 3rd generation mobile telephone standard. This standardization effort was governed by the IPR (intellectual property rights) policy developed in response to the difficulties faced handling patents during GSM standardization.

We are interested in addressing three questions. First, how did the IPR strategies used for

UMTS compared to those used for GSM? How well did the policies work this time? And what SSO policies might be used in the future?

We first review the standardization history and IPR policies for GSM and UMTS. We then analyze the 1,227 unique patents claimed to be essential by 72 firms involved in the UMTS standardization effort. We then discuss the problems with the UMTS patent policy, and a series of changes proposed both inside and outside the standardization effort, and conclude with a summary of the study's contributions.

DEVELOPMENT OF ETSI'S IPR POLICY

The standardization of UTMS[1] was both technically and institutionally a successor to that of the 2nd generation GSM (née Group Special Mobile). Much of the technical development took place at the European Telecommunications Standards Institute (ETSI), an outgrowth of the GSM standardization effort, and it involved many of the same telecommunications vendors and operators that led the early GSM effort.

In particular, the UMTS standardization began with the IPR policy created by ETSI in response to problems encountered during GSM standardization. Here we review those problems, the ETSI policy that resulted, and how they were applied during UMTS standardization.

GSM Standardization

The initiative to create the first pan-European mobile phone standard began with the *Conférence Européenne des Administrations des Postes et des Télécommunications* (CEPT), the organisation of all the major incumbent telephone operators. Under pressure from the European commission, in 1988 the standardization efforts were transferred to the newly-created ETSI, but with the operators still in control of standards deployment through a group called the GSM Memorandum of Understanding (MoU) (Bekkers, 2001).

As an initial IPR policy, the GSM MoU proposed a requirement that suppliers must grant operators a free worldwide license for all patents they held to implement GSM, and indemnify operators for all claims of patent infringement by third parties. However, the patent licensing policy was rejected by one of the largest IPR holders, Motorola.[2] Other manufacturers tacitly supported Motorola's rejection of the policy, leading to its defeat (Garrard, 1998; Iversen, 1999).

In response, most (but not all) operators substituted a requirement that all suppliers promise to provide IPR to the entire GSM community (both suppliers and operators) under 'fair, reasonable and non-discriminatory conditions' (Bekkers et al, 2002: 179). In some cases, this FRAND clause was obtained by additional payments to suppliers.

Motorola agreed to these terms under limited conditions, and obtained only a handful of supply contracts. At the same time, it refused to license its IPR under royalty, but instead required cross licensing, eventually negotiating licenses with Siemens, Alcatel, Nokia and Ericsson (Garrard, 1998; Bekkers et al, 2002). These cross-licensing agreements provided a strong cost advantage for the five incumbent licensees, and created high barriers to entry by prospective GSM suppliers, with royalty rates for non-cross-licensees estimated at 10-13% (West, 2006).

Development of ETSI's IPR Policy

After the rejection of the GSM MoU policy, ETSI made several attempts to develop its own IPR policy. Under heavy influence of operators, in 1993 ETSI proposed an IPR policy that firms were assumed to license IPR on a non-exclusive, FRAND basis unless they notify ETSI otherwise. Again this policy was abandoned in the face of informal and legal opposition (Iversen, 1999; Bekkers, 2001). In 1994, ETSI proposed