

## **Advisory Committee on Enforcement**

**Eighteenth Session**  
**Geneva, June 2 to 4, 2026**

### **TRENDS IN ANTI-COUNTERFEITING TECHNOLOGIES IN THE REPUBLIC OF KOREA**

*Contribution prepared by Jun-Young Lim, Deputy Director, Intellectual Property Dispute Resolution Bureau, Ministry of Intellectual Property, Daejeon, Republic of Korea\**

#### **ABSTRACT**

In the face of increased circulation of counterfeit goods worldwide and improved counterfeiting techniques, the Republic of Korea is promoting the adoption of anti-counterfeiting technologies. This contribution analyzes their practical applications in the marketplace and demonstrates how such technologies function not only as security measures but also as mechanisms for market monitoring and consumer protection, thereby enhancing the effectiveness of anti-counterfeiting strategies in the online environment.

---

\* The views expressed in this document are those of the author and not necessarily those of the Secretariat or of the Member States of WIPO.

## I. ONLINE DISTRIBUTION OF COUNTERFEIT GOODS IN THE REPUBLIC OF KOREA AND ITS ECONOMIC IMPACT

1. The rapid growth of online commerce has been accompanied by a significant increase in the circulation of counterfeit goods worldwide. The growing sophistication of counterfeiting techniques is making it difficult to distinguish genuine from fake goods through visual inspection alone. The Ministry of Intellectual Property of the Republic of Korea is therefore prioritizing a preventive approach based on product-linked authentication technologies enabling user verification (preventive anti-counterfeiting technologies). When adopted by enterprises, they help consumers and market participants to verify authenticity directly, thereby reducing the harm caused by the purchase of counterfeit goods, heightening the replication barriers for counterfeiters and strengthening protection of brand value.

2. Advances in digital technology and the widespread adoption of digital platforms and mobile devices have reduced the spatial and temporal constraints associated with offline transactions, drastically accelerating the speed and frequency of the circulation of goods, and greatly increasing their volume, across digital channels. In the Republic of Korea, the volume of online transactions increased by 40 per cent over three years, growing from 187 trillion Korean won (KRW; US dollars 127 billion) in 2021 to KRW 259 trillion (US dollars 175.9 billion) in 2024.

3. The conditions that have greatly improved convenience for consumers and enterprises also facilitate the distribution of counterfeit goods. More critically, counterfeiting, once concentrated in the high-end luxury brands segment, has now spread across a wide range of everyday consumer goods – from infant products to cosmetics and automotive parts – thereby sharply increasing risks for consumers.

4. The scale of the problem is reflected in its broader economic impact. According to the Organisation for Economic Co-operation and Development (OECD) report, *Illicit Trade and the Korean Economy (2024)*, the global value of counterfeit goods infringing the intellectual property rights (IPRs) of Korean enterprises reached KRW 11.1 trillion (US dollars 9.7 billion) in 2021, equivalent to about 1.5 per cent of the country's exports. The loss in domestic and overseas sales due to counterfeiting was estimated at KRW 7 trillion (US dollars 6.1 billion). Counterfeiting led to the loss of 13,500 jobs in the manufacturing sector of the ROK and a drop in government revenue of KRW 1.8 trillion (US dollars 1.57 billion), equivalent to three years of expenditure by the Ministry of Intellectual Property. The distribution of counterfeit goods not only reduces corporate revenues and employment by unfairly appropriating the results of creativity and effort, but also threatens public health and safety.

5. To address the situation, the Ministry has introduced a range of enforcement and policy measures to combat the distribution of counterfeit goods. They include pursuing legislative and institutional reforms, in cooperation with the National Assembly, and strengthening online monitoring and enforcement. In particular, in collaboration with trademark holders, online marketplaces are continuously monitored for counterfeit goods listings and platform providers are requested to block them upon discovery. In 2025, 307,718 domestic and 210,034 international cases of online counterfeit distribution were identified and blocked. However, those figures represent only detected instances. Given the budgetary and operational constraints on monitoring coverage, the actual volume of counterfeit goods circulating online, domestically and internationally, is likely to be substantially higher.

6. Developments in technology are helping to increase the scale and capability of counterfeit operations. Advances in artificial intelligence (AI) have enabled the production of counterfeit goods that are indistinguishable from the genuine article by visual inspection. Generative AI tools can analyze the design elements of genuine products at high resolution and facilitate highly accurate replication. The expansion of cross-border online transactions has also

accelerated the speed and internationalization of illicit distribution networks. Monitoring and enforcement measures alone cannot keep pace with the complexity and volume of counterfeit activity, making preventive technical measures increasingly necessary.

## **II. ROLES OF GOVERNMENTS AND TRADEMARK OWNERS IN PREVENTING THE DISTRIBUTION OF COUNTERFEIT GOODS**

7. Because enforcement measures alone cannot adequately address online counterfeit distribution, prevention requires the involvement of public authorities and market participants. Governments play a central role through enforcement, regulation and support for smaller enterprises, while trademark holders contribute by implementing product authentication and other preventive measures in their supply chains.

8. The limitations of traditional enforcement approaches have also been recognized at the international level, the OECD, in its draft voluntary *Guidelines for Countering Illicit Trade in Online Marketplaces* (May 2025), emphasizes the importance of cooperation among governments, online platforms and trademark holders through information sharing on counterfeit distribution and joint awareness-raising initiatives on genuine goods.

9. The OECD emphasizes the role of governments in supporting small and medium-sized enterprises (SMEs), and rights holders are encouraged to adopt technologies that enable reliable differentiation of their genuine goods from counterfeits, thereby strengthening preventive capability within distribution channels. Those recommendations underscore the importance of authentication technologies as a practical preventive measure and provide policy context for efforts to promote their adoption.

## **III. MINISTRY INITIATIVES TO PROMOTE PREVENTIVE ANTI-COUNTERFEITING TECHNOLOGIES**

10. In line with this cooperative approach, the promotion of technological countermeasures by rights holders has become an important component of preventive anti-counterfeiting efforts. Despite their potential, anti-counterfeiting technologies have not been widely adopted due to limited awareness of available solutions and concerns regarding implementation costs. The Ministry has therefore taken steps to strengthen public/private cooperation and to facilitate the adoption of anti-counterfeiting technologies across industry.

11. In 2025, the Ministry organized two conferences on anti-counterfeiting technologies in Seoul – the Technologies for Preventing the Distribution of Counterfeit Goods Conference (June) and Technologies for Authentication of Counterfeit Goods Conference (October) – to enhance understanding among enterprises and rights holders and to support their practical implementation in efforts to combat counterfeiting. Participants included enterprises possessing anti-counterfeiting technologies (“technology providers”), trademark holders, and both domestic and foreign institutions.

12. The conferences featured seminars on public/private strategies to deter counterfeit distribution; networking opportunities for technology providers and trademark holders; the introduction of IP infringement response programs and consultations; and exhibitions showcasing anti-counterfeiting technologies used at home and abroad. Demonstrations also highlighted the integration of security features and information and communication technologies for applications such as corporate marketing and distribution management. Participants were thus able to observe recent technological trends and examples of application and understand the importance of product authentication and counterfeit prevention measures.

#### IV. ANTI-COUNTERFEITING TECHNOLOGIES IN THE REPUBLIC OF KOREA

13. During the exhibition and demonstration sessions, a broad gamut of technologies were presented, including counterfeit authentication technologies, anti-counterfeiting features and AI-based monitoring systems. They ranged from basic (such as holograms and labels) to advanced solutions (such as AI-based watermarking). The technologies were divided into three levels based on the difficulty of verification and accessibility and the requirement for specialized equipment. Understanding the differing characteristics and functional scope of these technologies is essential for assessing their suitability across industries and enforcement contexts.

14. **Level 1 Technologies:** consist of visually verifiable anti-counterfeiting features. They are the most widely adopted solutions owing to their simplicity and relatively low cost, and their primary function is to enhance consumer confidence in product authenticity. Typical examples include security labels incorporating optical interference elements that change color or image depending on the viewing angle, allowing authenticity to be checked with the naked eye, and tamper-evident labels that display warning markings such as “VOID” or “OPEN” when removed from packaging. However, their capacity to deter replication or provide robust authentication is limited, and there is little scope for integrating them into broader functions, such as marketing or supply chain management.

15. **Level 2 Technologies:** enable authenticity verification using widely available devices such as smartphones or simple inspection tools to reveal hidden components. They provide stronger authentication and anti-replication capabilities than Level 1 solutions, and enable interaction between the product and digital systems. Examples include security printing that is visible only under specific ultraviolet light, watermark-type invisible security labels or QR codes embedded with layered security elements that consumers can verify through mobile applications. Some applications generate unique security values for each item, enabling tamper detection and real-time tracking across distribution channels. Such features make it possible to link authentication information to marketing communication and supply-chain monitoring functions. However, they generally require higher initial investment and system implementation costs than Level 1 technologies.

16. **Level 3 Technologies:** require specialized equipment for verification and provide the highest degree of security. They are primarily used for investigative and enforcement purposes and are typically incorporated into internal authentication or inspection systems rather than consumer-facing verification. Examples include radio frequency identification (RFID)-embedded markers that enable authentication and traceability throughout distribution stages, micro-sized text features embedded in product surfaces that can only be confirmed under magnification and advanced material-response or electromagnetic identification systems that support detection of tampering, diversion or unauthorized returns. Because these technologies are generally not perceptible to consumers, they contribute less directly to consumer confidence but are highly valuable for enforcement authorities and rights holders in conducting inspections, investigations and supply-chain monitoring.

#### V. FURTHER INTEGRATION WITH DISTRIBUTION MANAGEMENT AND CONSUMER COMMUNICATION FUNCTIONS

17. When integrated with information technology systems, anti-counterfeiting technologies can function as part of broader product-tracking and distribution management systems as well as marketing. Authentication data generated during verification allows brand owners to monitor product movement across distribution channels in near real time. For example, this allows retail partners to confirm production information, distributors to verify authorized sales channels, and

headquarters to conduct centralized tracking and analytics. Suspicious authentication patterns – such as repeated verification attempts, unusual locations data or abnormal distribution routes – may indicate counterfeit activity, thereby enabling rapid response and targeted enforcement.

18. At the consumer level, these technologies can also serve as communication interfaces between rights holders and purchasers. Through QR-based or similar mobile interfaces, consumers can confirm product authenticity while simultaneously accessing product/brand information, usage guidance or promotional content. Because authentication generates time and location data, it can also contribute to centralized monitoring and the detection of abnormal patterns. This multifunctionality – combining authentication, communication and data generation – supports consumer protection and engagement strategies while increasing consumer confidence in the brand's genuine products.

## **VI. CONCLUSION**

19. The expansion of online commerce has transformed the nature of counterfeiting, while advances in manufacturing and AI have made counterfeit products increasingly difficult to distinguish from genuine goods through traditional identification and inspection practices. Monitoring and reactive enforcement alone are not enough to address large-scale online counterfeit distribution and need to be supplemented by preventive measures and efforts by the public and private sectors.

20. The experience of the Republic of Korea shows that preventive and authentication measures – particularly product-linked anti-counterfeiting technologies – can effectively complement enforcement responses to counterfeiting. When adopted by enterprises, such technologies enable authenticity verification at multiple points in the marketplace, including by consumers, distributors and enforcement authorities. When integrated with information and communications technologies, authentication data can also support distribution monitoring, reveal abnormal patterns, facilitate investigations and encourage informed purchasing decisions. Preventive authentication technologies thus function not only as security features but also as practical tools for market transparency and oversight.

21. By helping to block counterfeit goods from entering the market, these anti-counterfeit technologies serve not only to safeguard enterprises' brand value and consumer confidence, but also to protect public health and safety, ultimately contributing to a more trustworthy marketplace and supporting conditions conducive to sustainable innovation. Governments can play a facilitating role by raising awareness of anti-counterfeiting technologies, encouraging their use, and supporting engagement between rights holders, platforms and enforcement authorities. The Ministry will continue to refine institutional measures and strengthen public/private cooperation in order to combat counterfeiting.

[End of contribution]