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Non-conventional marks: the EU reform of trade marks, Brexit, and the Internet of Things⁺

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1. Scope of the paper

This paper deals with the registrability of non-conventional marks after the EU reform of trade marks¹ and some technological developments, including the Internet of Things (IoT).² Even if olfactory marks (scents or smells) are the chosen prism, most considerations apply also to other non-conventional marks, such as holograms, movements, and tastes.

In the UK, whereas in theory olfactory trade marks can be registered, there have not been successful applications since the EU Court of Justice's decision in *Ralf Sieckmann v Deutsches Patent- und Markenamt*.³ This paper suggests that scents may be more easily registered in the near future as a consequence of the EU reform of trade marks and of technological innovation.

⁺ Please cite as Guido Noto La Diega, 'Non-conventional marks: the EU reform of trade marks, Brexit, and the Internet of Things' (*Diritto Mercato Tecnologia*, 16 January 2018) <<https://www.dimt.it/index.php/it/notizie/16608-non-conventional-marks-the-eu-reform-of-trade-marks-brexit-and-the-internet-of-things>>

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¹ Directive (EU) 2015/2436 of the European Parliament and of the Council of 16 December 2015 to approximate the laws of the Member States relating to trade marks (hereinafter the 'Trade Marks Directive') [2015] OJ L 336.; Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark (EUTM Regulation) [2017] OJ L 154; Commission Implementing Regulation (EU) 2017/1431 of 18 May 2017 laying down detailed rules for implementing certain provisions of Council Regulation (EC) No 207/2009 on the European Union trade mark [2017] OJ L 205; Commission Delegated Regulation (EU) 2017/1430 of 18 May 2017 supplementing Council Regulation (EC) No 207/2009 on the European Union trade mark and repealing Commission Regulations (EC) No 2868/95 and (EC) No 216/96 [2017] OJ L 205. The Directive will have to be transposed by 14 January 2019. In turn, the Regulations are effective as of 1 October 2017.

² In the Internet of Things (IoT), 'Things' are an inextricable mixture of hardware, software, service, and data (Guido Noto La Diega and Ian Walden, 'Contracting for the "Internet of Things": Looking into the Nest' (2016) 7(2) *European Journal of Law and Technology* 1).

³ [2002] ECR I-11737.

2. The registration of olfactory marks under the current regime and with existing technologies

There are three basic criteria for the registration of trade marks.⁴ The mark must be a sign, that is ‘anything which can convey information.’⁵ It is incontrovertible that scents can convey information; after all, Shakespeare taught us that names and words are main carriers of meaning, since ‘(a) rose by any other name would smell as sweet.’⁶ This sign must be capable of graphic representation; therefore, the applicant must produce an adequate representation of the mark on the TM3 application form.⁷ In order for the representation to be adequate, *Sieckmann* dictated seven criteria, i.e. clear, precise, self-contained, easily accessible, intelligible, durable and objective. Lastly, the mark must be capable of distinguishing goods and services of one undertaking from those of another undertaking.⁸ If a scent is not an intrinsic characteristic of the product and is not commonly used (e.g. floral fragrances in fabric softeners), customers may see the scent as distinctive, given that the olfactory memory ‘is probably the most reliable memory that humans possess.’⁹ Overall, the main hurdle, when it comes to scents, is how to represent them graphically.

In *Sieckmann*, it was held that the graphic representation of an olfactory mark must represent the odour whose registration is sought and not the product emitting that odour. Therefore, it was stated that the chemical formula (C₆H₅-CH=CHCOOCH₃) of the substance emitting the odour (methyl cinnamate) could not be regarded as a valid graphic representation. The scent was described as ‘balsamically fruity with a slight hint of cinnamon’, but the Court held that the description of the scent was not sufficiently clear, precise and objective and that the deposit of a sample of methyl cinnamate did not constitute a graphic representation, and was not durable. The same applied to the combination of chemical formula, sample, and description of the scent. The expectations of national intellectual property offices to receive guidance by the Court of Justice on how to interpret the graphic representation were frustrated.¹⁰

⁴ Trade Marks Act 1994, s 1.

⁵ *Phillips Electronics NV v Remington Consumer Products Ltd (No. 1)* [1998] RPC 283, 298.

⁶ *Romeo and Juliet*, II, II.

⁷ *Nestle v Cadbury* [2013] EWCA Civ 1174.

⁸ *Société des Produits Nestlé S.A. v Cadbury UK Ltd (No 2)* [2016] EWHC 50, [2017] EWCA Civ 358.

⁹ *Eden SARL v OHIM* [2005] ECR II-4705 [25].

¹⁰ *John Lewis of Hungerford Ltd’s Trade Mark Application* [2001] RPC 28 [47].

Sieckmann was followed by *Eden SARL*, which again clarified what does not meet the requirements for registration of a scent (the image of a strawberry described as ‘smell of ripe strawberries’), without providing any guidance as to how companies may be able to register scents as trade marks. In particular, the Court of Justice observed that it is common ground that ‘at the present time, there is no generally accepted international classification of smells which would make it possible, as with international colour codes or musical notation, to identify an olfactory sign objectively and precisely.’¹¹



Fig. 1. The ‘smell of ripe strawberries’ as represented by Eden SARL

After this, it was commented that ‘the EU system's graphic-representation requirement makes it virtually impossible in practice, albeit not in theory, to gain registration of a scent mark.’¹² The very narrow interpretation of ‘graphic representation’ provided by the Court of Justice was not the only choice available. For instance, in Australia even though there is a graphic representation requirement,¹³ olfactory marks have been successfully registered.¹⁴ Another example is provided by the (then) Office for Harmonisation in the Internal Market (OHIM)’s case law ante *Sieckmann*, that recognised that a description of the scent could meet the graphic representation requirement if it provided ‘clear enough information to those reading (it) to walk away with an immediate and unambiguous idea of what the mark is when used in connection with (the relevant good or service).’¹⁵ The factual impossibility to register scents as trade marks, however, should not lead one to forget that other routes may be available, in particular patents, trade secrets, unfair commercial practices and, in the UK, the tort of passing

¹¹ *Eden* (n 9) [34].

¹² Megan Bartkowski, ‘New Technologies, New Trademarks: A Review Essay’ [2006] 19 CLI 431.

¹³ Trade Marks Act 1995, s 40.

¹⁴ IP Australia trade mark No 1241420 represented as the Eucalyptus Radiata scent for golf tees.

¹⁵ *Vennootschap onder Firma Senta Aromatic Marketing's Application* [1999] ETMR 429 [13].

off.¹⁶ The Hoge Raad der Nederlanden (Supreme Court of The Netherlands) held that fragrances could enjoy copyright protection, but this seems an isolated ruling in Europe.¹⁷

The EU case law on olfactory marks can be seen as constituting a major obstacle to innovative branding strategies, which could rely on that very reliable memory which is the olfactory one. Along the same lines, legal scholars noted that ‘the impact of sense of smell on the customers’ choices is not to be underestimated.’¹⁸ Therefore, even though someone is sceptical as to the attractiveness of olfactory marks,¹⁹ economic operators would have a clear interest in using scents to identify their goods or services. At the same time, there is a risk that opening to scents and other non-conventional marks may lead to unjustified monopolies. As pointed out by Advocate General in *Sieckmann*, the requirement of graphic representation is imposed for reasons of legal certainty; indeed, a ‘registered trade mark grants to the owner a monopoly (...) the symbols so claimed must be known very precisely so that other people may be properly guided (...) graphic representation is thus linked with the identification function, the primary and essential function of trade marks.’²⁰ Therefore, the cautious approach towards non-conventional marks is rooted in the traditional function of trade marks and in the need to prevent a monopolisation of signs.

The UK businesses’ interest in olfactory marks is attested by the fact that the UK Intellectual Property Office (UKIPO) accepted the applications for registration of marks for a ‘floral fragrance/smell reminiscent of roses applied to tyres’²¹ and ‘the strong smell of bitter beer applied to flights for darts.’²² Both marks were registered before *Sieckmann* and *Eden SARL*. At a global level, the interest in the industry is proved by a number of successful applications particularly in the US,²³ less so in the EU.²⁴ Moreover, over the years some countries expressly opened to olfactory marks.²⁵ More recently, in the US, Hasbro has filed an

¹⁶ For an overview of IP protection of scents see Cristina Hernandez-Marti Perez, ‘The possibility of IP protection for smell’ (2014) 36(10) EIPR 665.

¹⁷ *Kecofa BV v Lancôme Parfums et Beauté et Cie SNC (Lancôme)*, HR June 16, 2006, NJ 2006; *contra* see, in France, *Bsiri-Barbir v Haarmann & Reimer* [2006] E.C.D.R. 28.

¹⁸ Joanna Wiszniewska ‘Olfactory trade marks in the UK Trade Mark Law’ (*University of Edinburgh*, 2013) <blogs.sps.ed.ac.uk/sls/files/2013/08/Joanna-Wiszniewska.pdf> accessed 15 January 2018.

¹⁹ Luca Escoffier and Jin Arnold Jin, ‘To scent, or not to scent, that is the question: A comparative analysis of olfactory trademarks in the EU and US as good brand opportunities for SME’ (2011) April WIPO SMEs Newsletter.

²⁰ *Sieckmann* (n 3), Opinion of AG Ruiz-Jarabo Colomer, para 36.

²¹ UKIPO trade mark No 2001416.

²² UKIPO trade mark No 2000234.

²³ See, e.g., the flowery musk scent in Verizon’s stores; USPTO trade mark No 4618936.

²⁴ For instance, see the smell of freshly cut grass for tennis balls; OHIM trade mark No 00428870.

²⁵ E.g. the Australia Trade Marks Act 1995, s 6.

application to register Play-Doh's scent.²⁶ In the US, it is easier to register a scent because the focus is not on the graphic representation, but on establishing that the mark is non-functional and distinctive.²⁷

Now, UKIPO's *Trade Marks Manual*²⁸ does not rule out the registrability of olfactory marks. Indeed, it refers to *Sieckmann* to explain how not to represent olfactory marks graphically, but it seems to imply that they can still be registered, since it goes on to explain how to meet the third requirement for registration, i.e. distinctiveness. In particular, a scent 'may be distinctive as a trade mark if it is not an inherent or natural characteristic of the goods/services but is added by the applicant to identify their goods and is recognised by the public as indicating trade origin.' Therefore, whilst a floral fragrance is unlikely to be registrable for fabric softeners and the smell of coffee for a type of coffee, one may argue that the distinctiveness requirement may be met in the event of a scent of a particular type of coffee used consistently applied to all fabric softeners of a single undertaking and accompanied by an advertising campaign clearly referring to this unusual smell. Such a registration would be more likely to be successful in the event of acquired distinctiveness through use (which is what Hasbro is counting on in its Play-Doh application).²⁹

3. The impact of the EU trade marks reform on non-conventional marks

New possibilities for olfactory branding may be opened by legal and technical innovations. The first one is the EU reform of trade marks. Indeed, the yet-to-be-transposed Trade Marks Directive introduces a new definition of trade marks where the graphic representation of the mark is no longer required. Under the new regime, those who want to register a smell will only need to represent it 'in a manner which enables the competent authorities and the public to determine the clear and precise subject matter of the protection afforded to its proprietor.'³⁰ The Chartered Institute of Trademark Attorneys (CITMA) commented that the new definition 'should make it easier to register more unusual marks such

²⁶ Franco Galbo, 'Law & Odor: Hasbro Sniffing Out the Opportunities for Trademark Registration' (IPWatchdog, 23 October 2017) <<http://www.ipwatchdog.com/2017/10/23/law-odor-hasbro-sniffing-opportunities-trademark-registration/id=89173/>> accessed 15 January 2018.

²⁷ Lanham Act, s 2, 15 U.S.C. 1052; *Trademark Manual of Examining Practice* 1202.13; *In re Clarke*, 17 USPQ2d 1238, 1239-40 (TTAB 1990).

²⁸ UKIPO, *Manual of Trade Marks Practice (UKIPO)*, 3 March 2009, updated 31 March 2016) <www.gov.uk/government/uploads/system/uploads/attachment_data/file/672536/manual-of-trade-marks-practice.pdf> accessed 15 January 2018.

²⁹ *ibid*

³⁰ Trade Marks Directive, art 3(b).

as sound and smell.³¹ Some difficulties may remain because the Trade Marks Directive incorporated the so-called *Sieckmann* criteria, that the (then graphical) representation must be ‘clear, precise, self-contained, easily accessible, intelligible, durable and objective.’³² However, even not going as far as arguing that ‘the amendments will abolish the *Sieckmann* judgement,’³³ it is not excluded that the seven criteria may be interpreted differently in the future, for example as meaning that a combination of description, chemical formula and sample may meet the new requirements for registration. Indeed, with the new definition of trade marks there is a shift from the ‘how’ to the ‘who’. It is immaterial how the trade mark is represented (whether graphically or otherwise), as long as the competent authorities and the public can determine the subject matter of the protection. Arguably, the said combination of description, chemical formula, and sample may suffice from the authorities’ perspective. When it comes to the public, it is likely that this requirement will be absorbed by the distinctiveness. An unusual scent used consistently on a range of products or services of a single undertaking and accompanied by heavy advertising would easily put the public in the position to determine the subject matter of the protection, especially if distinctiveness is acquired through use; thus, the requirement could be easily made out. One could foresee a return to the case law ante *Sieckmann* that valued the customers’ viewpoint and stated, for instance, that an olfactory mark described as freshly cut grass will be recognised immediately by anyone, reminding ‘of spring, or summer, manicured lawns or playing fields, or other such pleasant experiences.’³⁴ The customers’ scent-related power of imagination cannot be underestimated. A number of scents can evoke clear memories and feelings. Even though as pointed out by Aristotle, smell is less accurate than sight,³⁵ one could argue that accuracy is not key here and, for instance, the scent of mulled wine could stimulate memories related to Christmas, happy moments with the loved ones sharing something warm while outside it is cold, etc.

Another hurdle may be the extension of some absolute grounds for exclusion from registration that used to refer only to shapes and now include any ‘other characteristic.’³⁶ In particular, under the current regime, it is not possible to register a shape if it results from the nature of the good, if it gives substantial value to it or if it is necessary to obtain a technical

³¹ Chartered Institute of Trade Mark Attorneys, ‘EU trade mark reforms’ (*CITMA*, 2017) <www.citma.org.uk/membership/eu_resources/eu_trade_mark_reforms> accessed 15 January 2018.

³² Trade Marks Directive, recital 13.

³³ Onur Sahin, ‘The past, the present and the future of colour and smell marks’ (2016) 38(8) EIPR 504, 513.

³⁴ *Senta Aromatic* (n 15) [14].

³⁵ *De anima*, II.9, cf Johnstone 2012.

³⁶ Trade Marks Directive, art 4(1)(e).

result.³⁷ These absolute grounds are particularly important because they cannot be overcome through acquired distinctiveness.³⁸ However, the extension of these exclusions to all signs should not have a substantial impact on olfactory marks. The scents depending on the nature of the good were already non-registrable in the UKIPO's practice.³⁹ For those adding substantial value to the good, it is likely that companies will keep preferring the route of trade secrets⁴⁰ and patents.⁴¹ Lastly, it is hard to imagine many scenarios where scents could be necessary to achieve a technical result.

Therefore, it would seem that the EU trade marks reform may leave some scope for scents and other non-conventional marks. The same considerations apply to the European Union Trade Mark (EUTM),⁴² given that EUTM Regulation provides the same definition and criteria for representation,⁴³ as well as grounds for exclusion from registration⁴⁴ as the Trade Marks Directive. The EUTM Regulation is relevant for all UK businesses wanting to apply for a EUTM, provided that they have a place of business, a real and effective establishment, or a domicile in the EU, or, alternatively, they have appointed a representative for all proceedings before the EU Intellectual Property Office (EUIPO).

One could object that since the EUTM Implementing Regulation lists a number of marks and ways to represent them, including non-conventional marks such as holograms and sounds,⁴⁵ the absence of scents could be interpreted as an obstacle to the registrability of olfactory marks. Now, this lacuna is a missed opportunity to provide clarity and certainty in the analysed sector. However, this is not to say that the said provision will prevent the registration of scents, because the list is non-exhaustive. Indeed, the EUTM Implementing Regulation requires the applicant to indicate that the mark is one of the listed ones only '(w)here the application concerns any of the trade mark types listed in points (a) to (j)'.⁴⁶ Consequently, when one applies for a non-listed mark, e.g. a scent, the said requirement does not apply. Even more openly, then, it is provided that if a mark is not comprised in the said list, 'its representation shall comply with the standards set out in paragraph 1 and may be accompanied

³⁷ See, respectively, *Unilever PLCs Trade Marks Applications* [2003] RPC 35; *Bang & Olufsen v OHIM* [2011] ECR II-6975; *Phillips Electronics NV* [78] [82].

³⁸ Trade Marks Act, s 3(2).

³⁹ UKIPO (n 28) para 3.2.

⁴⁰ Faye M Hammersley, 'The smell of success: Trade dress protection for scent marks' (1998) 2 *Marq Intell Prop L Rev* 105.

⁴¹ USPTO patent No 9006168.

⁴² This was formerly known as Community Trade Mark or CTM.

⁴³ EUTM Regulation, art 4 and recital 10; see also the EUTM Implementing Regulation, art 3.

⁴⁴ EUTM Regulation, art 7(1)(e)(iii).

⁴⁵ EUTM Implementing Regulation, art 3(3)(a)-(j).

⁴⁶ EUTM Implementing Regulation, art 3(3)

by a description.⁴⁷ This means, again, that what is important is that the competent authorities and the public can determine the subject matter of the protection. An obstacle to the registration of scents as EUTMs, however, could follow from the precision that the ‘filing of a sample or a specimen shall not constitute a proper representation of a trade mark.’⁴⁸ However, while this provision will not necessarily affect national trade marks, it cannot be interpreted as preventing an applicant from using a sample in combination with other elements such as description and chemical formula.

In the guidelines updated in October 2017,⁴⁹ the EUIPO reiterates that olfactory marks cannot be registered because current technology would not allow them to be represented in a clear, precise, self-contained, easily accessible, intelligible, durable, and objective way.⁵⁰ However, one could put forward a twofold objection. First, there is need for sound empirical evidence as to the state of the technologies available for scent representation. Second, marks should be represented in ‘a manner which enables the competent authorities and the public to determine the clear and precise subject matter of the protection.’⁵¹ The former *Sieckmann* criteria should constitute an aid to the interpretation, not the criteria against which to assess whether the mark has been properly represented or not. Nonetheless, businesses and practitioners need to keep in mind that currently the EUIPO will treat applications for the registration of scents as not filed.⁵²

3.1. The impact of Brexit on national and EU trade marks

Even though there is no specific international obligation to regulate olfactory marks,⁵³ such an obligation may arise from the duty to transpose the Trade Marks Directive. Indeed, the UK has an obligation to implement the Trade Marks Directive by 14 January 2019,⁵⁴ because the withdrawal from the EU is set to be definitive on 29 March 2019. Unfortunately, the UK Government has not clarified its position as to the implementation of the reform yet. One could put forward the argument that the non-implementation of the Trade Marks Directive may

⁴⁷ EUTM Implementing Regulation, art 3(4)

⁴⁸ EUTM Implementing Regulation, art 3(9)

⁴⁹ EUIPO, *Guidelines for examination of European Union Trade Marks* (Part B Examination – Section 2 Formalities).

⁵⁰ *ibid* [9.11.2].

⁵¹ EUTM Regulation, art 4(b).

⁵² EUIPO (n 49) [9.11.2].

⁵³ Trademark Law Treaty, art 2(1)(b).

⁵⁴ There is separate implementation deadline for Article 45 (‘Procedure for revocation or declaration of invalidity’), i.e. 14 January 2023 (Trade Marks Directive, art 54(1)).

expose the UK to a state liability claim under *Factortame III*.⁵⁵ Indeed, when a Member State does not implement a directive within the deadline the requirement of ‘sufficiently serious breach’ is automatically made out.⁵⁶ It remains to be assessed if, as it would seem, this directive confers rights on the individuals and whether there is direct causal link between the non-implementation and the loss or damage. The latter is a question of fact left for the national courts to determine, but one could argue that practical impossibility to register scents or other non-conventional trade marks, being a consequence of the UK keeping the graphic representation requirement, could constitute a damage directly linked to the non-implementation. That the non-implementation may damage UK businesses can also be inferred by the then UK Minister for IP’s statement about the EU reform according to which the ‘convergence of trade mark practices and processes throughout the EU will create a more robust and streamlined system fit for the digital age.’⁵⁷ It is submitted that, given the interests of UK businesses to have a protection for their trade marks as strong as the European counterparts, there is a ‘continued need for the UK to implement (the Trade Marks Directive).’⁵⁸ More generally, it has been observed that the lack of uniformity with regards to ‘scent mark registrations may have deleterious effects on national economies.’⁵⁹ The EUTM Regulation (as well as the implementing one and the delegated one⁶⁰), in turn, have already become applicable in all Member States including the UK on 1 October 2017 without need for a national implementation measure. However, probably, EUTMs will not cover the territory of the UK. Conversely, as recommended by the European Commission’s Task Force for the Preparation and Conduct of the Negotiations with the United Kingdom under Article 50 TEU in its position in view of the fourth Brexit negotiation round, existing unitary rights such as the EUTM/CTM shall automatically ‘be recognised as the holder of an enforceable intellectual

⁵⁵ *Brasserie du Pêcheur SA v Bundesrepublik Deutschland and The Queen v Secretary of State for Transport, ex parte: Factortame Ltd and others* [1996] ECR I-1029 (so-called Factortame III).

⁵⁶ *Dillenkofer and others v Federal Republic of Germany* [1996] ECR I-4845.

⁵⁷ UKIPO and Baroness Neville Rolfe, ‘Changes to EU Trade Marks finalised: greater clarity and certainty for UK business’ (*UK Government*, 15 December 2015) <www.gov.uk/government/news/changes-to-eu-trade-marks-finalised-greater-clarity-and-certainty-for-uk-business> accessed 15 January 2018.

⁵⁸ Ilanah Simon Fhima, ‘Brexit: The IP Position Paper and trade marks’ (*IPKat*, 3 October 2017) <ipkitten.blogspot.co.uk/2017/10/brexit-ip-position-paper-and-trade-marks.html> accessed 15 January 2018.

⁵⁹ Lorraine M Fleck, ‘What Makes Sense in One Country May Not in Another: A Survey of Select Jurisdictions re Scent Mark Registration, and a Critique of Scents as Trade-Marks’ (2003) 27 <studylib.net/doc/18662879/what-makes-sense-in-one-country-may-not-in-another--a-sur...> accessed 15 January 2018.

⁶⁰ Commission Delegated Regulation (EU) 2017/1430 of 18 May 2017 supplementing Council Regulation (EC) No 207/2009 on the European Union trade mark and repealing Commission Regulations (EC) No 2868/95 and (EC) No 216/96

property right in relation to the United Kingdom territory.’⁶¹ The International Trademark Association (ITMA), however, points out that the continued protection for existing CTMs ‘may not be automatic, third parties may have the possibility of challenging the conversion, and there will most likely be associated costs.’⁶² In turn, the Chartered Institute of Patent Attorneys (CIPA) recommends ‘a transitional period for IP rights which will enable an orderly, smooth exit that will protect the interests of rights holders.’⁶³ As to the pending applications, then, when the application for an EUTM has been submitted before the date of the UK’s withdrawal from the EU, the Union’s position in the Brexit negotiations is that a new national application will have to be made and that this shall ‘benefit of any priority date in respect of such pending application.’⁶⁴ Now, even if the EU trade marks reform is unlikely to produce durable direct effects on UK trade marks law, one can foresee that the national legislation, practice, and case law will keep being consistent with the EU ones. Given that the EU is the main market for UK businesses,⁶⁵ it is in everyone’s best interest to have very similar legal regimes in place for intellectual property rights. Therefore, if the EU opens to olfactory marks, the UK may follow.

4. Advances in odour recognition and sensing technologies: gas chromatography, smelling screen, and the Internet of Things

Alongside the said legal innovations, technological progress could make the registration of scents easier. Two methods that could be used are gas chromatography and smelling screens.⁶⁶

Gas chromatography is the ‘premier technique for separation and analysis of volatile compounds.’⁶⁷ A scent may well be graphically represented by a gas chromatogram. However,

⁶¹ European Commission- Task Force for the Preparation and Conduct of the Negotiations with the United Kingdom under Article 50 TEU, ‘Position paper on Intellectual property rights (including geographical indications)’ (European Commission, 20 September 2017) 2 <ec.europa.eu/commission/sites/beta-political/files/intellectual_property_rights.pdf> accessed 15 January 2018.

⁶² International Trademark Association, *INTA’s Brexit Brands Toolkit. Preparing Brand Owners for Brexit* (INTA 2017) 3.

⁶³ Chartered Institute of Patent Attorneys, ‘The impact of Brexit on Intellectual Property’ (CIPA, 11 October 2017) para 4.1 <<http://www.cipa.org.uk/policy-and-news/briefing-papers/the-impact-of-brex-it-on-intellectual-property/>> accessed 15 January 2018.

⁶⁴ European Commission (n 61) 3.

⁶⁵ In 2016, UK exports to the EU were £236 billion (43% of all UK exports). UK imports from the EU were £318 billion (54% of all UK imports). Matthew Ward, ‘Statistics on UK-EU trade. Briefing Paper No 7851’ (*House of Commons Library*, 19 December 2017) <researchbriefings.files.parliament.uk/documents/CBP-7851/CBP-7851.pdf> accessed 15 January 2018.

⁶⁶ Hernandez-Marti Perez (n 16).

⁶⁷ Harold M McNair and James M Miller, *Basic gas chromatography* (Wiley 2011).

the World Intellectual Property Organization (WIPO) takes the view that this technique would not be exact and it would be subject to considerable uncertainty, hence, it would ‘not fulfil the demand for unambiguous graphic representation.’⁶⁸ Whilst the graphic representation is no longer a requirement, one should assess whether progress has been made with regards to the accuracy of gas chromatography. It would seem that analytical chemistry research is advancing significantly and that, also thanks to artificial intelligence (particularly neural networks), scents can be identified with a high accuracy ‘close to 100%, without any false positives or false negatives.’⁶⁹ Therefore, gas chromatography may be now successfully used to represent olfactory marks in a way that meet the new criteria under the Trade Marks Directive and the EUTM Regulation.

Scent recognition research has followed many paths. One of them is the so-called smelling screen. This is a ‘new olfactory display system that can generate an odor distribution on a two-dimensional display screen.’⁷⁰ Smelling screens may enable olfactory marks to be sampled and, as each individual will be able to repeat this process, the ‘principle of easy accessibility will be accomplished.’⁷¹ Such a solution may provide certainty as to the registration of scents and other non-conventional marks, even though much depends on the developments and commercialisation of the relevant technology.

Given the said shift from the ‘how’ to the ‘who’ in assessing the requirement of representation, the commercial success of the smelling screen and of gas chromatography shall be one of the factors to take into account while assessing if the public can determine the clear and precise subject matter of the protection. The importance of this factor is confirmed by the EUTM Implementing Regulation, which provides that the ‘trade mark shall be represented in any appropriate form using generally available technology.’⁷² This leads us to the IoT, which has become a key commercial reality, with over 20 billion smart devices in 2017, set to become nearly 80 billion by 2025.⁷³ With the uptake of the IoT, one can foresee that odour recognition techniques will improve visibly. Indeed, the IoT is about devices equipped with connectivity

⁶⁸ WIPO, ‘Visible signs’ (WIPO, n.d.) 9
<http://www.wipo.int/export/sites/www/sct/en/comments/pdf/sct17/dk_1.pdf> accessed 29 November 2017.

⁶⁹ L. Ugena et al., ‘Identification and Discrimination of Brands of Fuels by Gas Chromatography and Neural Networks Algorithm in Forensic Research’ (2016) *Journal of Analytical Methods in Chemistry* 7.

⁷⁰ Haruka Matsukura, T Yoneda and H Ishida ‘Smelling screen: development and evaluation of an olfactory display system for presenting a virtual odor source’ (2013) 19(4) *IEEE Trans Vis Comput Graph* 606.

⁷¹ Hernandez-Martí Perez (n 16) 668.

⁷² EUTM Implementing Regulation, art 3(1).

⁷³ Statista, ‘Internet of Things (IoT) connected devices installed base worldwide from 2015 to 2025 (in billions)’ (Statista, 2017) <<https://www.statista.com/statistics/471264/iot-number-of-connected-devices-worldwide/>> accessed 29 November 2017.

and sensing and actuating capabilities.⁷⁴ Hence, it is likely that consumers will expect increasingly accurate and reliable sensors, including odour recognition ones. The ubiquitous availability of accurate electronic noses will make the (former) *Sieckmann* criteria more likely to be made out. When every object in everyone's home can clearly and accurately tell its users what a product smells like, arguably the public will be able to 'determine the clear and precise subject matter of the protection afforded to its proprietor.'⁷⁵

The relationship between IoT and trade marks, however, is ambiguous. Indeed, the development of the IoT could be slowed down by a new wave of non-conventional marks covering, for instance, the way smart devices interact. It should be remembered that the EUTM Implementing Regulation innovatively facilitates motion marks, which can be represented by 'by submitting a video file or by a series of sequential still images showing the movement or change of position.'⁷⁶ Thus, in the reform there is the echo of *Sony Ericsson Mobile Communications AB*,⁷⁷ though the emphasis of that decision was not on the means of representation (a video could help, but was not necessary), but rather on whether a reasonably observant person would 'understand precisely what the mark consists of, without expending a huge amount of intellectual energy and imagination.'⁷⁸ As an example of a possible new generation of marks, one could apply to register the following IoT interaction: once a flat's occupant is in front of the entrance, a face recognition software sends an input to the smart lock to unlock the door, a movement detector reacts to the opening of the door by switching on the lights; consequently, a light-sensitive scent box makes the flat smell like mulled wine and the electronic nose in the smart thermostat reacts by turning the heating on. Arguably, nonetheless, the extension of the absolute grounds for exclusion traditionally provided for the shapes to all the signs could constitute an obstacle to the registration of IoT interactions as trade marks. In particular, it seems likely that most interactions are necessary to achieve a technical result. Moreover, in the event of more complex solutions, these could add substantial value to the good and fall under patent law. Generally speaking, it is to be hoped that the courts will not allow an abuse of intellectual property rights in the IoT, because the creation of closed proprietary systems is contrary to the essence itself of the IoT, which is about interoperability.⁷⁹

⁷⁴ Noto La Diega (n 2).

⁷⁵ Trade Marks Directive, art 3(b).

⁷⁶ EUTM Regulation, art 3(3)(h).

⁷⁷ (2010) OHIM BoA R 443/2010-2.

⁷⁸ *ibid* [20].

⁷⁹ cf Guido Noto La Diega, 'Clouds of Things: Data Protection and Consumer Law at the Intersection of Cloud Computing and the Internet of Things in the United Kingdom' (2016) 9(1) *Journal of Law & Economic Regulation* 69.

5. Conclusions

Overall, legal and technical innovations promise a new age for olfactory marks and other non-conventional marks. Regardless of Brexit, there are good reasons for the UK to implement the Trade Marks Directive. Not only to prevent a state liability claim, but because a divergence could constitute a barrier for UK businesses to market their products and services in EU. At the same time, EU businesses' interest in targeting the UK as a market could decrease if they had to develop ad-hoc compliance practices. Once the Member States remove the requirement of the graphic representation, much will depend on how accurate and widespread the odour recognition technologies will be. It would seem that, thanks to artificial intelligence and the Internet of Things, highly reliable solutions will soon be commonly available. Thus, the public will be able to determine the subject matter of protection in the applications for olfactory marks; hence, the new representation requirement would be made out. The removal of the graphic representation, with its shift from the 'how' of the representation to the 'who', puts the public back at the centre of the system. One may foresee that the case law underlining the evocative force of scents and, more generally, the importance of the customers' power of imagination may play an increasingly significant role.⁸⁰ It may still hold true that 'if you are ambitious to find a new science, measure a smell,'⁸¹ but it does not seem that the scientific accuracy in odour perception will necessarily prevail over the power of imagination and the said evocative force.

The envisaged increased ease in the registration of scents and other non-conventional marks is likely to produce mixed reactions. On the one hand, this will be welcomed positively by businesses willing to innovate their branding strategies. On the other hand, those who fear the monopolisation of ideas underlying the commodification of scents could legitimately be worried.

⁸⁰ See, respectively, *Senta Aromatic* (n 15); *Sony Ericsson Mobile Communications AB* (n 77).

⁸¹ Alexander Graham Bell (1914) as cited in David Levine, 'Why is the sense of smell undervalued in Western societies?' (*Elsevier*, 17 March 2015) <www.elsevier.com/connect/why-is-the-sense-of-smell-undervalued-in-western-societies> accessed 15 January 2018.