



Models of separation, equivalence of treatment and the role of the supervisory committee

A study by Cullen International
for Organo di Vigilanza

December 2020

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EXECUTIVE SUMMARY

This study compares the models of separation and equivalence of access related to the incumbents in eight European countries: Czech Republic, Denmark, Iceland, Ireland, Italy, Poland, Sweden, the United Kingdom (UK), and in Australia and New Zealand.

These countries were chosen for the study based on current, past or potential future experience of separation applying to the vertically integrated operator. To Cullen's knowledge, these ten countries represent the best-known international experiences relevant to vertical separation and related wholesale service provision. At present, nine out of the ten researched countries adopted separation at the wholesale level, while one stopped implementing separation after 2017.

The study also has a special focus on the role played by the governance structure and the supervisory committee in assuring non-discrimination and a level playing field among access seekers. In the countries researched, four out of ten countries have a supervisory committee, and one had a supervisory committee before implementing the highest degree of separation, structural separation.

A. Vertical integration: equivalence of treatment and models of separation

Vertically integrated operators with significant market power (SMP) may have incentives to discriminate in favour of their own retail services. For example, by applying better wholesale prices internally or by offering own retail services access to better quality of service, information or systems.

National regulatory authorities (NRAs) may impose a non-discrimination obligation to prevent such behaviour. This obligation can be based on equivalence of inputs (EoI) or equivalence of outputs (EoO). EoI implies that exactly the same products, prices and processes are offered to competitors as to the SMP operator's own retail arm. EoO means that the products offered by the SMP operator to alternative operators and to its own retail business are comparable in terms of functionality and price, although different systems and processes may be used.

To ensure compliance with non-discrimination, NRAs may also consider imposing some form of separation on the vertically integrated incumbent. When NRAs do so, they must ensure that the separation obligation remains proportionate to the identified competition problem.

In simple terms, the equivalence model adopted (EoI or EoO) sets out the level and form of non-discrimination protection available to competitors, whereas the model of separation should help to ensure the compliance and enforcement of the chosen equivalence model.

In the academic literature, Martin Cave [defined](#) in 2006 different models of separation, ranging from simple accounting separation to more complex ownership separation.

Martin Cave's separation options (Cullen International)

Model of separation	Description
Accounting separation	Costs and revenues of upstream and downstream products are allocated in different baskets. Preserves efficiency of vertical integration but does not provide equivalence of access.
Creation of a wholesale division	The incumbent has a separate wholesale division which supplies upstream inputs to competitors. The retail arm still has a preferential way to access products. No equivalence of access.
Virtual separation	First form of equivalence of access, as internal and external customers are treated equally. No physical separation of the businesses.
Business separation (BS)	Physical separation of businesses and new business practices, e.g. new office location, new brand, separate OSS, separate management information systems.
Business separation with localised incentives	As BS but it also involves incentives for senior managers in the separated entity

Model of separation	Description
Business separation with separate governance arrangements	As BS with localised incentives but it requires also the creation of a divisional board with non-executive directors independent of the group.
Legal separation	Separate legal entities under the same ownership
Ownership separation	Separate legal entity with different ownership

In 2016, the UK national regulatory authority (Ofcom) [published *Strengthening Openreach's strategic and operational independence*](#). In that document, Ofcom identified eight possible models of separation to apply to the vertically integrated incumbent BT.

Ofcom's models of separation (Cullen International)

Model of separation	Description
Accounting separation	Separate financial reporting, with costs and revenues of the upstream and downstream products allocated into different baskets
Creation of a wholesale division	A separate wholesale division established to supply inputs to competitors but without equivalence of access
Virtual separation	Services offered to internal and external customers on equal terms, without any physical separation of the businesses
Functional separation	Physical separation of the business and its processes, e.g. location, staff, branding, management information systems
Functional separation with local incentives	Functional separation with separate governance and different management incentives to those of the wider firm
Functional separation with independent governance	Creation of a divisional Board with non-executive members who act independently from the group Board
Legal separation	Upstream business is established as a separate legal entity within the wider group but remains under the same overall ownership
Structural separation	Split of the vertically integrated operations into separate legal entities, with no significant common ownership and 'line-of-business' restrictions to prevent them re-entering each other's markets

Under European law, the EU 2009 regulatory framework introduced separation as an "*exceptional*" regulatory remedy that might be imposed by NRAs, differentiating it from the standard remedy of accounting separation set out in the [Framework Directive](#). The EU 2009 regulatory framework also provides for the possibility of voluntary separation by an SMP operator. The two procedures are set out in articles [13a](#) and [13b](#) of the Access Directive.

Article 13a of the Access Directive gives to the NRAs the power to impose functional separation when they have demonstrated that it is the only way to achieve competition in the market after all other remedies from the regulatory framework have failed.

However, the term functional separation as used under European law is quite flexible and this flexibility can cause some confusion when seeking to clarify the different models of separation used. In particular, article 13a seems to incorporate different models of separation that can be imposed by an NRA, including both the creation of an independent operating business entity and legal separation. However, article 13a of the Access Directive, as further clarified by the [BEREC Guidance on functional separation](#) of 2011, does not refer either to accounting separation (a standard remedy under article [13](#) of the Framework Directive) or to structural separation, which could be in principle be imposed under competition law (by the national competition authority).

Even if structural separation cannot be mandated by NRAs as an "*exceptional*" remedy under article 13a, vertically integrated operators can propose it voluntarily under the procedure set out in article [13b](#) of the Access Directive.

The terms of articles [13a](#) and [13b](#) are carried over to the new EU regulatory framework in articles [77](#) and [78](#) of the [European Electronic Communications Code](#) which member states must transpose into

national law by 21 December 2020. These articles contain the provisions on functional and voluntary separation in very similar terms to those set out in the Access Directive.

Cullen International has categorised the countries researched based on three broadly defined forms of separation:

- Functional separation: physically separated staff, systems and processes.
- Legal separation: separate legal entity remaining under the same overall ownership, physically separated staff, systems and processes.
- Structural separation: separate legal entity with different ownership.

B. Main findings: equivalence of treatment model and non-discrimination

Of the countries researched, Iceland and New Zealand have an equivalence access model based on EoI for fixed access services. The UK has an equivalence access model based mainly on EoI.

A mixture of EoI and EoO obligations, depending on the fixed access service requested, applies in Ireland, Italy and Sweden.

Denmark and Poland currently have an EoO regime. In the Czech Republic, the NRA removed the EoI and KPI remedies imposed in 2015, following its fourth round review of market 3a and market 3b in 2018, introducing a more general obligation of non-discrimination. In Australia, the national wholesale-only broadband network is also subject to a general non-discrimination obligation.

This study has also assessed the mechanisms applied by the NRAs in the eight European countries to detect potential discriminatory behaviour and enhance transparency with respect to the delivery and quality of the SMP operator's regulated wholesale access products in the relevant markets¹. In particular, the following aspects have been analysed in connection with the regulatory obligations imposed in the wholesale local access market (M3a) and wholesale central access market (M3b) that are presented as three benchmarking tables in Annex I-III:

- Annex I – Service Level Agreements (SLAs) and Service Level Guarantees (SLGs).
- Annex II – Key Performance Indicators (KPIs).
- Annex III – Technically Replicability Test (TRT).

In seven out of eight countries, NRAs have imposed an obligation to report KPIs that measure the level of performance in the provision of the relevant wholesale services and compliance with the SLAs. Only in the Czech Republic, the KPI obligations have been removed following legal separation of the incumbent's retail arm from its wholesale subsidiary.

KPIs are reported on monthly basis in Denmark, Iceland, Italy, Poland and the UK. In Italy, certain KPIs are also on bi-monthly basis. In Ireland and Sweden, KPIs are reported on quarterly basis.

There are also differences between countries in terms of transparency requirements. In three countries KPIs are published on a website available to the general public: in Denmark and Ireland – by the SMP operator, in Sweden – by the regulator. In Iceland and Poland, the KPIs are only available to registered wholesale customers through a password protected website. In the UK, KPIs are reported to the regulator and relevant industry stakeholders, whereas in Italy publication requirements apply to a specific subset of KPIs.

In six countries – Denmark, Iceland, Ireland, Italy, Poland and Sweden – there is also a requirement to report separately internal and external KPIs that enables a comparison between the quality of service the SMP operator supplies to itself or its retail subsidiaries and the quality of service it provides to third-party access seekers.

¹ When referring to the NRA analysis of broadband markets, this study focuses on two markets broadly defined in the 2014 version of the [European Commission recommendation on the relevant markets](#) as the wholesale local access market (M3a) and the wholesale central access market (M3b).

C. Main findings: models of separation

In the countries researched, nine out of ten adopted separation at the wholesale level.

Ireland, Italy and Poland implement functional separation. The Italian incumbent (Telecom Italia) also notified to the NRA its latest project of voluntary legal separation in September 2020.

The Czech Republic, Denmark, Iceland and the UK implement legal separation. The Swedish incumbent, Telia, voluntarily implemented legal separation from 2007 to 2017 through its fully owned subsidiary [Skanova Access AB](#) before reintegrating it as a part of a larger wholesale unit (Telia Infra) on 1 January 2018.

To Cullen's knowledge, at present only Australia and New Zealand have implemented structural separation. In Australia, structural separation was completed in July 2020. In New Zealand, the vertically integrated incumbent decided to split itself into two separately listed companies under different ownership in 2011.

D. Organisational and governance structure

The different models of separation involve decisions on how the separated wholesale division will work, including on matters such as reporting obligations, Chinese walls, and on which IT systems can be shared and which ones require a separated access.

In addition, the governance structure of the separated wholesale division might be subject to a supervisory committee and/or a monitoring unit that oversees the compliance of the SMP operator with its non-discrimination commitments.

Of the countries researched, four out of ten countries have a supervisory committee, Iceland, Ireland, Italy and the UK. In New Zealand, there was a supervisory committee (IOG) from 2008 to 2011, the period when the incumbent operator had been implementing functional separation. However, the committee ceased to exist after the implementation of structural separation in 2011.

Poland does not have a supervisory committee per se that monitors compliance with non-discrimination commitments but the system of KPIs is subject to independent audits to verify its functioning.

Australia also does not have a supervisory committee. However, when the incumbent was implementing functional separation before its structural separation, the Independent Telecommunications Adjudicator (ITA) provided a voluntary fast-track dispute resolution to investigate and resolve complaints on equivalence between wholesale customers and the incumbent.

Supervisory committee main findings (Cullen International)

Country	Monitoring power	Sanctioning power	Cooperation with NRA and/or NCA	Appointment	Duration of mandate
Iceland	Yes	No	<p>Yes</p> <ul style="list-style-type: none"> reports to the NCA if it becomes aware of any violations of the non-discrimination obligations set out in the settlement between Siminn/Mila and the NCA submits an annual report to the NCA and the NRA on implementation and monitoring of the non-discrimination obligations and dispute resolution proceedings 	<p>Three members</p> <ul style="list-style-type: none"> All independent of Siminn. One Mila's employee may be appointed to the committee who has not been previously in charge of services and customer relations Chairman of the committee shall always be independent of Siminn and Mila. <p>Siminn appoints the committee members, subject to the approval by</p>	Two years

Country		Monitoring power	Sanctioning power	Cooperation with NRA and/or NCA	Appointment	Duration of mandate
					the NCA and the NRA, within one month of the appointment.	
Ireland		Yes	No	Yes Periodically reports to the NRA on matters within its mandate	Five members <ul style="list-style-type: none"> • Three appointed and remunerated by the NRA • Two appointed by the incumbent from non-executive members 	Five years (Until May 2024, then no obligation to maintain supervisory committee)
Italy		Yes	No	Yes <ul style="list-style-type: none"> • Reports to the NRA discrimination problems • The supervisory committee has started new forms of cooperation with the NRA set out in annual workplans (e.g. proposal for i. a new set of KPIs and KPOs, ii. a simplification and rationalisation of the causes of failed provision orders, iii. study on the digitalisation of processes for monitoring delivery performance in work orders) 	Five members <ul style="list-style-type: none"> • Three appointed by the NRA • Two appointed by the incumbent after consultation with the NRA 	Five years
United Kingdom	Openreach - OBARCC	Yes	No	Yes <ul style="list-style-type: none"> • Reports a breach of the Commitments or the Governance Protocol by Openreach to the NRA • Must provide extracts of minutes of all its meetings to the NRA. • must provide a detailed annual report on the compliance of Openreach with the Commitments and the Governance Protocol and its handling of customer complaints to the NRA 	Four members <ul style="list-style-type: none"> • One (Openreach chairman) appointed by BT Group after consultation with the NRA • Three (independent non-executive directors) appointed by BT Group following consultation with the Openreach Chairman and the NRA <p>BT may delegate to the Openreach Board (in consultation with the BT Group nominating & governance committee) the appointment of independent non-executive directors.</p>	Five years
	BT - BTCC	Yes	No	Yes <ul style="list-style-type: none"> • Reports a breach of the Commitments or the Governance Protocol by BT to the NRA 	At least three members (currently four members) Members of the BTCC (independent non-executive directors) are appointed by the board	Not specified

Country		Monitoring power	Sanctioning power	Cooperation with NRA and/or NCA	Appointment	Duration of mandate
				<ul style="list-style-type: none"> must provide extracts of minutes of all its meetings to the NRA 	audit & risk committee or the BT Group board.	

CASE STUDIES

Summary of the main findings of the study (Cullen International)

	✔ Yes ✘ No ○ Past/project										
Country											
Separation applied at wholesale level?	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	
Functional				✔	✔	✔		○ 2005-2017 (Past)	○ 2012-2020 (Past)	○ 2008-2011 (Past)	
Legal	✔	✔	✔		○ 2020 (Project)		○ 2008-2017 (Past)	✔			
Structural									✔	✔	
Supervisory committee?	✘	✘	✔	✔	✔	✘	✘	✔	✘	○ 2008-2011 (Past)	
Equivalence of access obligations	General non-discrimination	EoO	Eol	Both Eol and EoO	Both Eol and EoO	EoO	Both Eol and EoO	Eol	General non-discrimination	Eol	

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I. CZECH REPUBLIC

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Czech Republic	Legal	CETIN	O2	General	No

A. Model of separation adopted

The Czech Republic adopts a form of legal separation where Ceska telekomunikacni infrastruktura (CETIN) is the sole national telecommunications infrastructure provider. In 2015, CETIN and the transformed O2 started to operate as two separate providers that carry out, in different roles, the business of the previously vertically integrated incumbent O2 Czech Republic (O2).

CETIN and O2 are two companies, independent from each other. However, since both companies (CETIN and O2) still have the same owner (PPF group), this is not in strict terms full structural separation. Neither can CETIN be considered as a wholesale-only operator, as defined in article 80 of the EECC, because CETIN and O2 are controlled by the same ultimate owner.

PPF is an international holding company based in the Netherlands. PPF has 100% ownership of CETIN and 85% of O2.

CETIN provides only wholesale services, offering regulated and commercial wholesale services to all telecoms operators on its fixed infrastructure network. CETIN operates and manages fixed and mobile infrastructure for O2 in the Czech Republic, as well as transit infrastructure abroad, with a presence (PoPs) in Europe, Africa and Asia. CETIN has no retail customers.

O2 is a retail-only provider, without any fixed infrastructure but with spectrum licences and mobile exchanges. The declared objective of the legal separation was to enable greater retail pricing flexibility for O2.

B. Organisational and governance structure

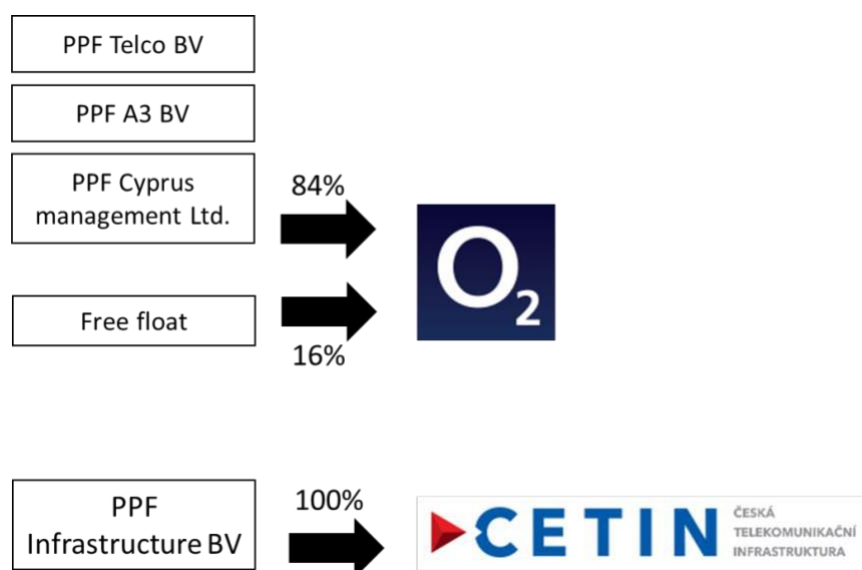
Although CETIN is the newer company established in 2015, it was O2 which was legally separated from the PPF group.

The table below lists the main steps in the development of the current organisational and governance structure.

Date	Actions taken
4Q 2013	PPF acquired the Czech incumbent from Telefónica Group.
4Q 2014	PPF informed the NRA about its intention to establish the retail-only and wholesale-only businesses.
1Q 2015	PPF publicly announced the legal separation.
June 2015	Start of operation of the newly separated companies, CETIN and O2
3Q 2015	NRA decision on remedies imposed KPIs and EoI on CETIN as a result of market analyses undertaken before the separation. NRA started the next market review because of the new market situation.
1Q 2018	NRA decision on remedies (M3a, M3b, M4) removed obligations from CETIN to provide KPI and EoI.

While the ultimate ownership of both CETIN and O2 is held by PPF group, each company has a separate ownership structure within the holding company, with distinct reporting lines. The major shareholders of O2 are: PPF Telco BV, PPF A3 BV, and PPF Cyprus Management Limited. CETIN is

owned by PPF Infrastructure BV. The Czech situation thus differs from other countries, for example in the UK, where BT has direct ownership of Openreach.



According to PPF, CETIN and O2 have different business strategies which would be incompatible in a single company. PPF sees CETIN as a strategic investment, while it considers O2 as a financial investment. Therefore, the company structure (the separation) results from PPF’s decision to differentiate its investments between strategically important long-term assets (CETIN) and medium-term financial assets (O2).

C. Elements of equivalence and non-discrimination

In 2015, the Czech NRA imposed EoI and KPIs on CETIN as a result of market analyses undertaken before the separation, when O2 was the vertically integrated provider. The NRA was under pressure to complete the market review because its analyses of markets 3a and 3b had been pending since 2010, with two previously withdrawn notifications to the European Commission.

However, in 2018, the NRA removed the 2015 EoI and KPIs remedies in its fourth round review of markets 3a and 3b, introducing instead a more general obligation of non-discrimination. The NRA was required to undertake this fourth round market review due to the voluntary legal separation of the former SMP operator.

The NRA removed its previously imposed remedies on the grounds that CETIN, as a wholesale-only provider, has a business reason to treat all telecoms operators equally, and has no retail customers. However, it imposed a more general obligation of non-discrimination in market 3b, with the aim to ensure the fair treatment of access seekers and to avoid the possibility that CETIN could set different prices for different access seekers with the intention of favouring O2.

This general obligation of non-discrimination is supervised in practice by the NRA (state inspection) without using specific KPIs. The inspector has wide discretion to monitor systems and interview employees when performing the inspection. For market 3a, the general non-discrimination obligation is supplemented with an economic replicability test between the services provided in market 3a and in market 3b.

Before CETIN started operations in 2015, it had developed a new ordering system for all wholesale partners, with no special provisions for O2. As a result, all wholesale partners have identical information about the current status of the CETIN fixed network, on plans to increase network capacity, or on their orders.

CETIN developed two interfaces to its system. A web-based interface for small (regional) partners who cannot invest in expensive IT systems, and a direct interface for large operators who adapted their systems to CETIN. Only the interfaces are different, not the information provided through them.

The regulated reference offer (mass market offer) in market 3b works with a volume and time commitment discount scheme. The three national mobile operators (O2, T-Mobile and Vodafone) are three of the top-tier wholesale partners of CETIN, followed by around 15-20 smaller wholesale partners.

CTU [started](#) the fifth review of the wholesale broadband markets in September 2020, with outcomes expected in Q2/2021. Normally, the regulator consults on draft analyses which outline possible remedies that the regulator is considering imposing on the SMP.

II. DENMARK

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Denmark	Legal	TDC Net	Nuuday	EoO	No

A. Model of separation adopted

The Danish incumbent operator, TDC, completed in June 2019 its legal separation into two independent companies encompassing services and infrastructure, respectively:

- Nuuday that provides retail services and comprises TDC's retail brands such as YouSee, TDC Business, Fullrate, Telmore, Hiper, Blockbuster and Firmafon; and
- TDC Net that develops and manages TDC's fixed and mobile network infrastructures.

The separation was implemented on a voluntary basis after the acquisition of 100% ownership in TDC by DK Telekommunikation ApS, a company controlled by a consortium comprising three of Denmark's largest pension funds (PFA, PKA and ATP), and Macquarie Infrastructure and Real Assets. In February 2018, DK Telekommunikation submitted a [recommended public takeover offer](#) to buy the entire share capital of TDC that was accepted by the board of TDC. In March 2018, the acquisition was [approved](#) by the European Commission.

B. Organisational and governance structure

Following the full legal separation, the two companies remain 100% owned by [TDC group](#) but operate as independent entities with their own staff, management, independent business strategy and branding.

The scope of TDC Net's activities includes the operations of its fixed infrastructure, comprising copper, fibre and cable TV networks, as well as its mobile network.

C. Elements of equivalence and non-discrimination

The Danish NRA, the Danish Business Authority (ERST), most recently addressed the scope of the non-discrimination obligations imposed on TDC in its [market analysis decisions](#) of 17 August 2017. These decisions, covering the wholesale broadband markets 3a and 3b, imposed nationwide obligations on TDC's copper network, as well as obligations on TDC's fibre network in less competitive areas (excluding 56 out of 592 post code areas).

ERST concluded that a non-discrimination obligation based on the EoO principle would be sufficient to address potential competition concerns. The imposition of non-discrimination based on EoI was considered to be disproportionate, as it would require TDC to implement major changes to its established IT systems and platforms, regardless of whether it would apply only to FTTH access products or also to the upgraded copper access network. Currently, TDC uses the same external ordering system, separated from its internal operations, to supply both sets of access products to its wholesale customers.

However, the EoO non-discrimination obligation was reinforced by a strengthened technical replicability obligation, in addition to the previously imposed transparency obligations, with detailed KPI and SLA requirements. TDC was required to run a technical replicability test for all of its new or substantially modified retail products, and to provide detailed documentation to the NRA. In particular, TDC was required to secure relevant updates to the external IT systems and processes used by TDC's wholesale customers.

All TDC's regulated wholesale access products are subject to cost-orientation, based on a BU LRAIC+ model. In addition, a price squeeze test is applied to a set of selected flagship products, comprising standalone broadband offers and broadband offers bundled with television.

So far, the Danish NRA has made no assessment of the impact of TDC's new organisational structure on the scope of its regulatory obligations. The new market analysis of the wholesale broadband markets is currently in progress and expected to be completed in 2021.

In 2020, ERST consulted at a national level on the product scope of the wholesale access market, which has been defined as combining both local and central access products but divided into two product submarkets according to the capacity:

- M3HC: wholesale high-capacity access market at a fixed location (fibre and HFC); and
- M3LC: wholesale low-capacity access market at a fixed location (copper and FWA).

As the next step, ERST also [consulted](#) on the proposed geographic scope and SMP assessment in M3HC, where it proposed to define 21 geographic high-capacity markets largely corresponding to the public utility areas where power utility companies have been deploying fibre networks. TDC and most of the utility companies are proposed to be designated as having SMP in their corresponding geographic fibre coverage areas (with the exception of few more competitive areas).

The scope of remedies to be imposed on SMP operators will be addressed at a later stage.

III. ICELAND

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Iceland	Legal	Mila	Siminn	Eol	Yes

A. Model of separation adopted

The Icelandic incumbent operator, Síminn, has implemented full legal separation of its telecommunications network infrastructure from any other retail and wholesale activities within the group. Mila, the network infrastructure subsidiary of the incumbent operator that owns and operates the national trunk and access networks, was established as a separate legal entity in 2007, shortly after Síminn's privatisation by the Skipti group in 2005.

Mila's operational and structural independence from the rest of the Skipti group was further enforced through the settlement agreement with the Icelandic Competition Authority (ICA) in March 2013 and its subsequent amendment in 2015.

Currently, Mila operates as a wholly owned subsidiary of the incumbent Síminn, with its own staff, board of directors, separate business premises, independent business strategy and branding. Mila's activities cover the operation of the copper- and fibre-based access networks and other passive network infrastructure, including collocation services at local exchanges and towers, as well as wholesale leased lines and bitstream access services. Síminn's separate wholesale division continues to offer the following services to alternative network operators (ANOs): fixed and mobile interconnection, wholesale line rental, resale of broadband, and IPTV services.

The governance model endorsed by the ICA includes an independent Supervisory Committee on Equal Access (EJAF) that monitors Síminn's and Mila's compliance with the terms of the settlement agreement as regards non-discrimination and equivalence of treatment towards all ANOs acquiring wholesale access to the incumbent's network, including Síminn's own retail division.

B. Organisational and governance structure

The first step towards the full legal and operational separation of Síminn's network infrastructure from the rest of its operations was achieved shortly after the privatisation of the incumbent operator in 2005, when the company was acquired by the Icelandic Skipti group. In April 2007, Skipti voluntarily separated its business into three legal entities (all 100% owned by Skipti):

- Síminn providing the full range of fixed and mobile telecommunications services for residential and business users;
- Mila operating the national trunk and access networks, as well as passive infrastructure (including collocation services at company's local exchanges and towers); and
- Fasteignafélagið Jörfi, a real estate company (this was sold in late 2007).

The voluntary separation model was not established to ensure the non-discriminatory treatment by Mila of Síminn and its competitors. Also, the boundaries between the wholesale services of Mila and Síminn remained rather unclear at the time, as Síminn continued to operate in both the retail and wholesale markets: e.g. offering wholesale leased lines as well as wholesale bitstream access services.

Following numerous complaints received by the ICA from ANOs, several investigations were opened that raised competition concerns about Síminn's market conduct. Under the provisions of the Icelandic Competition Act, the ICA is authorised to settle cases by reaching an agreement with the undertaking under investigation. In March 2013, a regulatory settlement was reached between the Skipti group and the ICA, in close cooperation with PTA, the Icelandic NRA.

As a result of this settlement, Skipti made commitments to implement substantial organisational and structural changes aimed at achieving stronger separation of its wholesale subsidiary Míla from Síminn, while ensuring that Síminn's competitors would have equal access to the wholesale inputs sold by Míla. Some of the regulated wholesale products, including wholesale bitstream access and leased lines services, were transferred from Síminn to Míla, contributing to a clearer separation between the retail and wholesale activities.

Skipti also accepted to pay ISK 300m (€1.9m) in settlement to the government.

The current organisational and governance structure of Síminn has developed through a series of different regulatory steps and undertakings, summarised in the table below:

Step	Date	NRA/NCA decision	Actions
1	April 2007	Not applicable: a voluntary separation decision by the Skipti group	Establishment of two separate legal entities (100% owned by the Skipti group): <ul style="list-style-type: none"> • Síminn, providing fixed and mobile telecommunications services; • Míla, operating national trunk and access networks and passive infrastructure.
2	26 March 2013	ICA Decision no. 6/2013: The Competition Authority's settlement, Skipti hf., Síminn hf. and Míla ehf.	ICA approved Skipti's proposed undertakings, including: <ul style="list-style-type: none"> • Administrative and operational separation of Míla from Síminn and other companies within the Skipti group, with Míla's own independent board of directors, own business strategy and profitability targets, separate salary and incentive schemes linked to Míla's earnings and results • Prohibition for Síminn and Míla to share legal services and office facilities as well as the same dining room • Transfer of wholesale bitstream access and leased line services from Síminn to Míla • Prohibition for Míla to operate at the retail level • Requirement for Míla to ensure full equality of access for Síminn and its competitors to its systems, services and technical solutions, with the same processing speed, terms and conditions, price, QoS and access to information • An operational and accounting separation between Síminn's retail and wholesale operations • The scope of wholesale services offered by Síminn to include interconnection, wholesale line rental and resale of broadband and IPTV services • Síminn's wholesale business unit must ensure equal access for Síminn's retail business and its competitors to its systems, services, and technical solutions, with the same processing speed, terms and conditions, price, QoS and access to information • Establishing a supervisory committee on equal access (EJAF)
3	13 Aug. 2014	PTA Decision no.21/2014 on SMP designation and imposition of remedies in the wholesale markets M4 and M5/2007	Designation of Míla as having SMP in M4 and M5/2007 <ul style="list-style-type: none"> • Imposition of non-discrimination obligations based on EoI for all regulated copper- and fibre-based wholesale access products in M4 and M5, subject to technical and economic replicability • Non-imposition of ex ante price controls on fibre-based wholesale products, once EoI has been implemented • Requirement to offer SLAs and SLGs covering QoS, ordering, delivery, switching and maintenance procedures
4	4 June 2015	ICA Decision no.6/2015: Competition Authority's settlement, Síminn hf. and Míla ehf.	Amendment to ICA Decision no 6/2013, following a merger between Síminn and its holding company Skipti in January 2015: <ul style="list-style-type: none"> • Míla becomes Síminn's 100% owned subsidiary (instead of being a sister company) • Strengthened independence of Míla's board of directors towards Síminn • Complete physical separation between Míla's and Síminn's office locations by 1 January 2017 • Strengthened independence of the supervisory committee on equal access

Step	Date	NRA/NCA decision	Actions
5	5 July 2017	Rules of Procedure of the Supervisory Committee	Approval of the EJAF procedural rules, following comments by Síminn and the ICA

The Supervisory Committee on Equal Access by electronic communications companies to the systems, technology solutions and services of Míla and Síminn Wholesale (EJAF) was established by the ICA settlement decision no.6/2013, becoming operational in July 2013. The main task of the supervisory committee is to monitor the compliance of Míla and Síminn with the terms of the settlement approved by the ICA in 2013, and as amended in 2015.

The committee is composed of three members independent of Síminn. However, one Míla employee, who has not previously been responsible for services and customer relations, may be appointed to the committee. The chairman of the committee shall always be independent of Síminn. Síminn appoints the committee members, subject to the approval (within one month of the appointment) by the ICA and the PTA. The committee members are appointed for a term of two years. Síminn is required to ensure that the supervisory committee can function normally and cover the cost of its operations. Síminn's internal auditor shall provide information and other necessary assistance so that the committee can perform its role in accordance with the settlement agreement.

The principal tasks of the supervisory committee include:

- Receiving complaints from ANOs when the settlement has not been complied with.
- Issuing to Míla and its customers advance guidance on the interpretation of the settlement conditions, to the extent that this is feasible.
- Informing Síminn how the terms of settlement are being met, with a special focus on Míla's and Síminn's wholesale non-discrimination obligations.
- Proposing to Síminn or its subsidiaries to undertake certain actions or to cease a particular behaviour to ensure compliance with the terms of the settlement. The committee has no power to influence the business or administrative decisions of Síminn or its subsidiaries but it may collect the evidence necessary to assess whether the companies have taken adequate measures to ensure that the objectives and conditions of the settlement are achieved.
- Notifying the ICA if the committee becomes aware that the settlement conditions may have been violated.
- Ensuring that annual reporting on implementation and monitoring as well as dispute resolution is prepared at the same time as Síminn's annual accounts. The report must be submitted to the Síminn's board, the ICA and the PTA but may be subject to confidentiality, i.e. not made public and accessible to third parties. The Síminn's board shall only have access to the part of the report that covers its activities.
- The confidentiality clauses shall not prevent the ICA from using the supervisory committee's report in its investigations of alleged violations, based on the general rules on confidentiality and access to data in administrative proceedings.
- The committee must always ensure that Síminn and Míla have a reasonable time to comment on its draft report before it is presented to the ICA, when the committee considers that the conditions of this settlement may have been violated.

C. Elements of equivalence and non-discrimination

On 26 March 2013, the ICA settlement decision imposed a requirement for Míla to provide equal access for Síminn and its competitors to:

- the same systems, services, and technical solutions; and
- the same processing speed, terms and conditions, including price, quality of service and access to the same information on technical and other necessary terms.

Following a June 2015 amendment to the settlement, stricter non-discrimination requirements were imposed on Síminn's wholesale division. This division operates as a special business unit within Síminn's organisation, with a separate management and subject to accounting separation, as well as rules of conduct on the protection of confidential information, and with access controls between retail and wholesale operations.

The non-discrimination obligation was further enforced by the PTA market analysis decisions on market 4 and market 5/2007 of 13 August 2014. Míla was designated as having SMP on both markets and was required to implement non-discrimination based on Eol for all copper- and fibre-based regulated wholesale products, as a precondition for not imposing ex ante price control obligations on its fibre-based products. Eol elements include:

- the same prices;
- the same service procedures/systems;
- the same time limits; and
- the same information about the services.

Míla is also required to publish internal and external KPIs on its website on monthly basis.

PTA is currently working on a new analysis of wholesale access markets (market 3a and market 3b/2014). Its [new draft analysis](#) of market 3a and market 3b/2014 was published for an initial national consultation in April-July 2020 and [additional consultation](#) was launched in October-November 2020.

As one of the most significant changes to the previous market analysis decision, PTA initially proposed to impose an ex ante price control obligations on Míla's fibre-based products. This proposal was however withdrawn after the initial consultation.

Now PTA maintains that an ex ante economic replicability test (ERT) imposed on Míla and Síminn fibre-based products should be sufficient to alleviate competition concerns. PTA also proposes to withdraw some of the regulatory obligations in selected more competitive municipalities with regard to the duct access, the obligation to announce in advance planned civil works and the obligation to announce five years in advance any planned network changes that affect LLU access seekers.

IV. IRELAND

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Ireland	Functional	open eir	eir	EoI and EoO	Yes

A. Model of separation adopted

Ireland applies a form of functional separation², resulting from an agreement between the incumbent and the regulator to settle some disputes concerning alleged discriminatory behaviour. [open eir](#), the wholesale unit of the Irish incumbent [eir](#), provides access services to both its retail arm and also to ANOs. Wholesale staff are separated from staff working in eir's retail arm. There is also separation, for the most part, between wholesale and retail systems and processes, although there is shared but controlled access to certain "low risk" IT systems from both parts of eir's business.

B. Organisational and governance structure

In December 2018, eir reached an [agreement](#) with ComReg, the telecoms regulator, to:

- create an independent oversight body (IOB) responsible for the compliance of eir's;
- regulatory obligations;
- increase the independence and transparency of its wholesale unit, open eir;
- establish a new regulatory governance model (RGM) to ensure its future compliance with wholesale non-discrimination and transparency obligations; and
- establish and maintain a regulatory code of practice.

The agreement arose as a compromise between the regulator and eir to settle two separate sets of proceedings raised by ComReg. In these proceedings, eir was charged with five incidences of alleged non-compliance with wholesale obligations, and an additional nine ongoing compliance cases.

ComReg and eir agreed on a set of performance milestones secured by a cash amount of €9m deposited into an escrow account to be drawn by ComReg in the event of a late or non-delivery of results. The performance milestones are related to

- the implementation of an assurance and oversight structure; and
- the design of IT systems and policies to comply with non-discrimination obligations.

In May 2019, eir and ComReg [established](#) the independent oversight body (IOB) to provide assurance that clear measures are in place to ensure eir's compliance with its regulatory obligations. The body consists of five members. ComReg appointed and remunerates three members. Eir appointed two members from non-executive members of its board.

The IOB does not have sanctioning power. It will remain in place for five years (i.e. until May 2024). Eir is not obliged to maintain the IOB after May 2024. Starting from 2021, the IOB's activities shall be subject to an annual external review, to be paid by ComReg.

² However, in the [correspondence](#) with ComReg the industry association of alternative operators ALTO said: "Eircom's retail and wholesale divisions are not functionally or legally separate – in fact, the same individual is responsible for Eircom's group pricing (wholesale and retail) and regulatory finance under its corporate structure."

A summary of IOB's main responsibilities is provided below:

Powers	Responsibilities
Supervise	<ul style="list-style-type: none"> Oversight of eir's regulatory governance measures Monitor compliance with undertakings and general regulatory obligations
Recommend	<ul style="list-style-type: none"> Propose to eir's Board any changes to the regulatory governance structure that would impact eir's ability to meet its regulatory obligations, including increased resourcing requirements for internal audit.
Review	<ul style="list-style-type: none"> Annual report on the implementation and effectiveness of Eir's regulatory governance measures published on the open eir website. Internal audit resourcing (both personnel and finance) Reports from the internal audit team The effectiveness of the governance arrangements in addressing complaints from operators The effectiveness of the operational and internal audit functions
Report	<ul style="list-style-type: none"> Periodically to ComReg on matters within its mandate Annual meeting with industry stakeholders
Approve (and amend if necessary)	<ul style="list-style-type: none"> Internal audit RGM work plan in relation to regulatory matters, following consultations with the Board and ComReg Compliance and assurance reports from risk management and internal audit

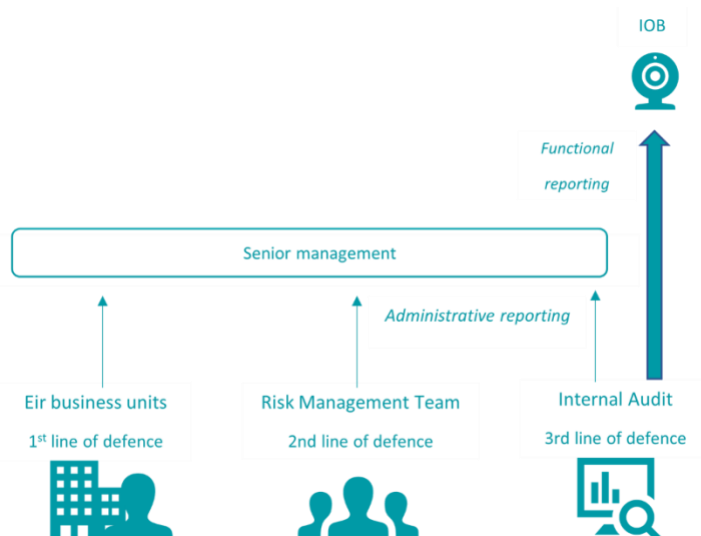
Eir implemented some measures to increase the independence and transparency of the wholesale division such as adopting the regulatory code of practice and a review of the business unit process compliance. In addition, eir designed and implemented a data asset register and performed a full review of IT systems containing confidential regulated information (CRI). The full review requires that all future IT systems will apply such design principles for user access profiles that ensure appropriate segregation of retail and wholesale data.

Eir provided to the IOB and ComReg a policy for remuneration of wholesale staff members, which specifically shows that incentives are based solely on performance of the wholesale division.

Eir's enhanced RGM consists of three mutually independent lines of defence:

- First line of defence are the business units managing regulatory risks of eir's products.
- Second line of defence is the risk management team.
- Third line of defence is the internal audit function which reports to the IOB.

Eir's RGM and reporting system (Cullen International)



In the monitoring of eir's adherence to the RGM undertakings, IOB takes into account the guiding principles covering:

- bespoke bids processes - evaluation teams for bespoke bids shall include wholesale pricing and risk management function;
- KPIs processes - rules for collection, processing and interpretation of raw data for KPIs;
- Non-operational decision making and approval processes - implement controls to mitigate risk of regulatory conflicts of interests during pre-meeting, post-meeting, distribution of confidential regulated information, etc.; and
- reporting to the IOB – including RGM committee reporting and internal audit reporting.

ComReg regularly reviews eir's implementation of the performance milestones from the settlement agreement. In recognition of the measures implemented by eir so far, ComReg agreed to repay to eir €6.5m from the escrow account.

To facilitate the dialogue on regulated access products between Eir and access seekers, ComReg established an independently chaired Industry Engagement Forum (IEF). It will meet monthly, starting from January 2021.

C. Elements of equivalence and non-discrimination

Eir will ensure as far as reasonably practicable the independence of the wholesale function. Independence in this context means that the wholesale function operates separately from eir's retail arm, treating all its wholesale customers in a non-discriminatory manner.

Following ComReg's recent [market analysis](#) of 2018 and its decision on the pricing of wholesale broadband services, eir provides access in market 3a based on EoO, but must assure access on Eol for VULA (referred to as VUA in Ireland) and civil engineering infrastructure (CEI), such as for pre-ordering, ordering, provisioning, fault logging and repair.

In market 3b, eir is obliged to provide access for bitstream over copper and FTTx (including bitstream provided using upstream WLA inputs) based on Eol.

Eol for CEI provides greater assurances to access seekers that there is no discrimination in the provision of CEI access compared to previously applied EoO model.

Primary changes required to implement Eol solution for CEI relate to the order management system. Order acceptance and acknowledgement could be implemented on eir's order management and fault handling system [unified gateway](#). In ComReg's view, eir should make further steps to assure Eol for CEI by aligning access seeker interactions with eir self-supply of CEI.

ComReg considered the transition to Eol for CEI not overly burdensome and the imposition of an obligation of Eol for CEI proportionate. CEI principles were also included in the settlement [agreement](#) of December 2018 (Annex 4)

V. ITALY

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Italy	Functional	TIM wholesale	TIM retail	EoI and EoO	Yes

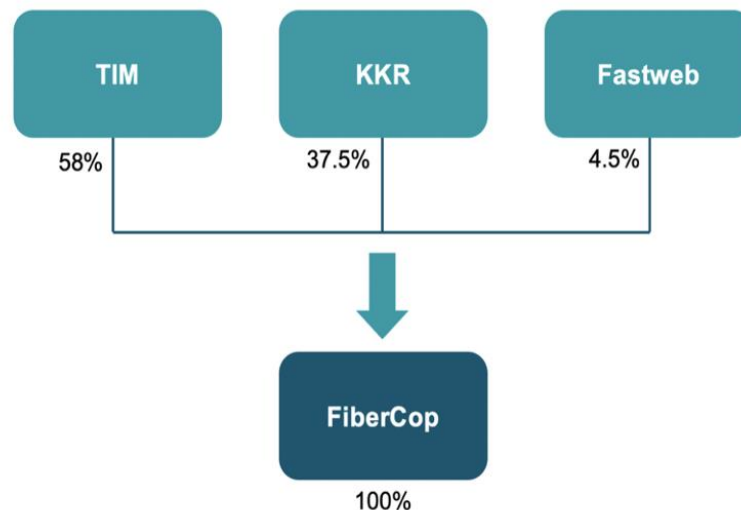
A. Model of separation adopted

Italy currently uses a functional separation model. The Italian incumbent, Telecom Italia (TIM), has a [wholesale division](#) department to provide access services both to TIM's retail arm and also to alternative network operators.

TIM's wholesale division function has its own staff, information systems, investment budget, and a separate incentive scheme for wholesale staff and management. In addition, the Italian approach to separation includes a supervisory committee, Organo di Vigilanza (OdV), which is responsible for ensuring TIM's compliance with the principles of non-discrimination and equal treatment towards all ANOs accessing the incumbent's network.

As part of a complex structure of transactions with an American investment company (KKR) and Fastweb, TIM notified a [project](#) of voluntary legal separation to the Italian telecoms regulator (AGCOM) for the creation of FiberCop.

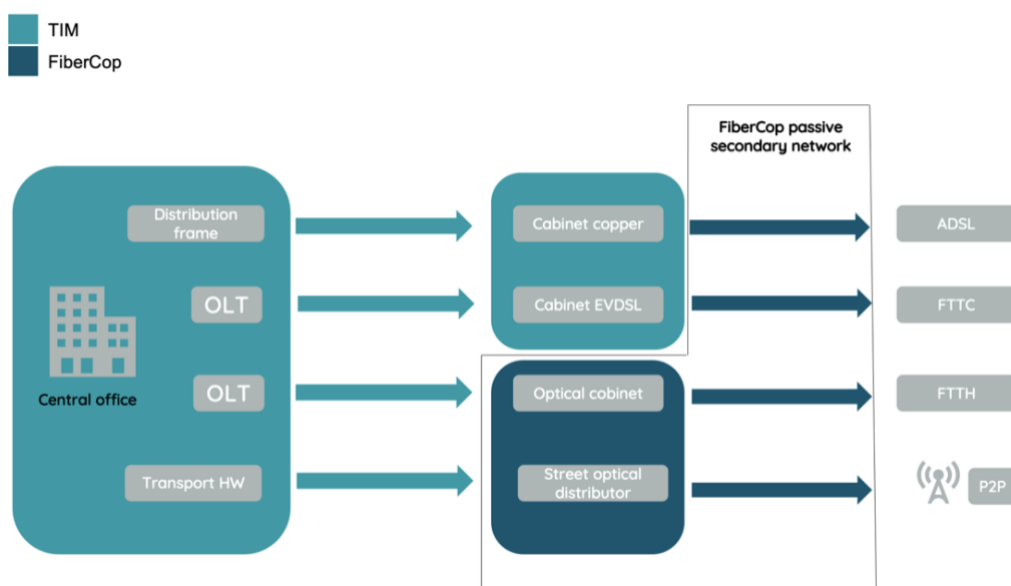
Transaction structure (Cullen International)



© Cullen International

FiberCop (the NewCo) will include all of TIM's passive secondary network infrastructure from the cabinet to the home both for fibre and copper, such as ducts and sockets (copper cabinets not included) along with the fibre network developed by FlashFiber, the joint venture in which TIM has an 80% and Fastweb a 20% stake.

FiberCop's perimeter will not include street cabinets for copper (Cullen International)



TIM said that the NewCo will allow TIM, Fastweb and other operators to co-invest in fibre coverage across the country. TIM also [signed](#) a memorandum of understanding with another operator, Tiscali, to create a partnership to develop fibre broadband through Tiscali's participation in the FiberCop co-investment plan.

AGCOM [published](#) a positive preliminary assessment of TIM's voluntary separation project and [opened](#) a public consultation until 28 January 2021 with the aim to gather suggestions from interested operators. According to BEREC guidelines on separation and the Italian electronic communications code, AGCOM will go through a new fixed market analysis to assess the impact of TIM's legal separation project on the existing regulatory obligations.

Furthermore, TIM and Cassa Depositi e Prestiti (Cdp, 82.8% state-owned financial institution pursuing a public interest mission) [signed](#) a letter of intent (LoI) to enable the creation of a single national fibre network (AccessCo).

AccessCo might be established through a potential future merger between FiberCop (in which TIM will contribute also its primary network) and Open Fiber (OF), a wholesale only operator rolling out FTTH 50% owned by CdP.

B. Organisational and governance structure

The organisational and governance structure of TIM's model of separation has developed through a series of different regulatory steps and undertakings, summarised in the table below:

Step	Date	AGCOM decision	Actions
1	15 May 2002	152/02/CONS "Measures to guarantee internal and external equal treatment"	<ul style="list-style-type: none"> Accounting separation Operational separation between TIM's wholesale and retail businesses
2	11 Dec. 2008	718/08/CONS "Approval of TIM's undertakings"	<p>AGCOM approved TIM's voluntarily proposed undertakings, including:</p> <ul style="list-style-type: none"> Creating a separate wholesale business unit (Open Access) and a new delivery and co-location procedure Establishing a new incentive scheme and code of conduct for TIM's wholesale staff Creating a mechanism of KPIs and Key Performance Objectives (KPOs) to test the quality of wholesale services

Step	Date	AGCOM decision	Actions
			<ul style="list-style-type: none"> Establishing a supervisory committee
3	5 Nov. 2015	623/15/CONS "Fixed market review M3a and 3b/2014 (split into decisions 652/16/CONS and 321/17/CONS)	<ul style="list-style-type: none"> AGCOM approved TIM's voluntary undertakings on the New Model of Equivalence (NME) Disaggregation of provisioning and assurance for LLU and SLU
4	18 July 2019	348/19/CONS "Fixed market review M3a and 3b/2014"	<p>Assessment of a previous project of voluntary legal separation notified by TIM in March 2018. The project entailed the creation of a separate wholesale (NetCo) and retail (ServCo) companies, both 100% owned by TIM.</p> <p>Disaggregation of provisioning and assurance also for VULA-FTTC</p>
5	14 Dec. 2020	637/20/CONS "Public consultation on TIM's legal separation project FiberCop"	<p>Ongoing public consultation on:</p> <ul style="list-style-type: none"> the impact of the legal separation project on the competitiveness of the fixed market access and on the current regulatory framework; FiberCop's perimeter and whether it sufficiently ensures a proper degree of separation from Telecom Italia's assets (TIM); FiberCop's governance model and whether it ensures the sufficient level of independence necessary to make its own strategic decisions in terms of investment strategy and network rollout; and the impact of the legal separation project on the existing non-discrimination obligations and equivalence model.

The Italian supervisory committee started in November 2015 to monitor TIM's compliance with the undertakings set out in decision 718/08/CONS, which entered into force in January 2009, and on the new model of equivalence (NME) offered by TIM.

The Italian supervisory committee (OdV) is composed of five members, each serving a term of five years. Three members are designated by AGCOM and two by TIM's CEO, after consultation with AGCOM. The president of OdV is chosen from one of the committee members designated by AGCOM. The staff of the OdV's office are employees of Telecom Italia designated to support the work of the OdV committee with a mandate of three years, renewable once for a maximum additional term of three years. Staff must sign a code of conduct to avoid any potential conflict of interest with TIM including for confidentiality, independence and diligence. OdV has an independent annual budget of not less than €880,000.

In addition to overseeing TIM's compliance with undertakings, OdV has started new forms of cooperation with AGCOM set out in annual workplans, such as

- the development of a proposal for a new set of KPIs and KPOs linked to the NME (OdV's proposal was largely reflected in AGCOM decision 395/18/CONS on KPIs);
- the proposal for a simplification and rationalisation of the causes of failed provision orders; and
- a study on the digitalisation of processes for monitoring delivery performance in work orders.

In the last fixed market review (AGCOM decision 348/19/CONS), AGCOM explained the new role that OdV could have played until 2022, assuming that such previous legal separation project would have taken place. According to that decision, OdV could have supported the regulatory start-up phase of NetCo, offered technical support to AGCOM to monitor compliance with NetCo's non-discrimination obligations, and gathered input from the new regulatory compliance officers of NetCo.

Whether OdV might play a similar role in the recent FiberCop voluntary legal separation project notified to AGCOM should be seen.

In addition, OdV will continue to monitor non-discrimination obligations, such as the new Eol model and the new KPIs set out in decision 395/18/CONS.

C. Elements of equivalence and non-discrimination

On 5 November 2015, TIM's board approved a "plan to introduce a New Model of Equivalence, aimed at further strengthening the efficiency and effectiveness of the delivery and assurance processes" for its wholesale access services.

The aim of the NME is to ensure that the sales divisions of TIM have an equal footing with those of the ANOs for more effective internal and external equality of treatment and for greater transparency in the management of line activation requests.

Currently, TIM must assure Eol (also called the full equivalence model) to ANOs for LLU, SLU and VULA FTTH services, whereas it must assure only EoO (described as an enhanced EoO "equivalence +") for VULA FTTC, bitstream and WLR shared access services.

As part of the new equivalence model, TIM also implemented:

- unified technical delivery system (Nuova Catena di Delivery) for both TIM Retail and ANOs to use the same processes, systems and databases for analysis of technical coverage and topology, order validation and acceptance, formal and commercial checks, assessment of technical feasibility, and order management and creation of the intervention request; and
- new network topology database (Netmap) which gives the same information to TIM Retail and ANOs for service activation.

In addition, TIM implemented the disaggregation of provisioning and assurance for LLU, SLU and VULA FTTC. This means that TIM gives ANOs the possibility to choose a third-party company (Impresa System) for provisioning and assurance in relation to the abovementioned services. These third-party companies are selected by TIM based on criteria such as reliability, competence, and financial stability, established in accordance with AGCOM.

VI. POLAND

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Poland	Functional	Orange wholesale	Orange retail	EoO	No

A. Models of separation adopted

Poland currently uses a functional separation model. The Polish incumbent, Orange Polska (OPL, previously Telekomunikacja Polska, TP), has a wholesale department that provides regulated wholesale services both to OPL's retail arm and also to ANOs.

OPL applies the following non-discrimination mechanisms:

- physically separated wholesale department;
- separate management, employees and IT systems;
- separate remuneration incentives system;
- a code of conduct; and
- EoO, in combination with a system of KPIs for non-discrimination.

From 2007 to 2009, UKE, the Polish regulator, [contemplated](#) imposing a separation obligation that would establish a new organisational unit to supervise and control the access network of OPL and provide selected wholesale services based on EoI. This separation would have addressed the complaints from ANOs and prevented OPL's potentially discriminatory practices at wholesale level. In December 2008, UKE [launched](#) an administrative proceeding to impose the separation obligation on OPL.

OPL reacted in March 2009 to the administrative proceeding by proposing a voluntary model of separation based on equivalence of access (the [Charter of Equivalence](#)), citing this as a better and cheaper alternative to UKE's proposed separation model. OPL estimated the costs of the implementation of the voluntary model at PLN 110-300m (€24.5-66.7m), while the separation proposed by UKE would have cost PLN 750m (€166.7m).

The proposed measures in the Charter of Equivalence included:

- separate management structure for the wholesale division;
- separate incentives for the wholesale division;
- code of conduct and a system of trainings;
- EoO;
- chinese walls and IT systems access profiles;
- KPIs for non-discrimination between ANOs and OPL's retail division;
- establishing an external oversight body, the Telecommunications Forum; and
- establishing an internal oversight body, the Committee of Equivalence.

OPL negotiated the Charter with ANOs and the regulator for several months but without a conclusion. Eventually, OPL and UKE set out a four-year investment agreement, related to the deployment of broadband lines, and created a new non-discrimination model on 22 October 2009. These included some of the measures previously proposed in the Charter but did not foresee the establishment of a separate supervisory committee.

B. Organisational structure and governance structure

OPL's wholesale department is headed by the Executive Director in charge of the Carriers Market. It is located separately from the company's headquarters, in another city.

The Executive Director in charge of the Carriers Market holds an independent position within OPL's Management Board, reporting directly to the President of the Management Board (see page 153 of OPL's [report 2019](#) for details of the executive structure as of 1 January 2020).

The current wholesale structure resulted from the expired investment agreement, which introduced the following measures in 2009:

- creation of a separate wholesale division with independent objectives, management and employee incentives;
- appointment of the wholesale division's vice-president as a member of OPL's board
- of directors responsible for following the proper implementation of the new non-discrimination model;
- introduction of a set of KPIs to be published monthly and audited by an independent auditor;
- restricting access for OPL's retail division to the IT systems used by OPL's wholesale division; and
- creation of a code of conduct for all TP's wholesale employees to ensure appropriate non-discriminatory behaviour.

C. Elements of equivalence and non-discrimination

OPL's voluntary undertakings, based on EoO, were first adopted with the agreement with UKE in October 2009, and implemented by UKE's regulatory [decision](#) of 30 December 2010 for market 4 and the [decision](#) of 28 April 2011 for market 5.

Following the next round of market analyses for the wholesale markets 3a and 3b, UKE [decided](#) to impose non-discrimination obligations based again on EoO and not on EoI.

Before selecting EoO, UKE assessed the proportionality of the implementation of the EoI model. UKE thought that the costs to implement EoI were not justified, considering the competition problems in the market.

Costs for introducing EoI only for FTTH services

Cost category	Estimated costs (in € millions)
Administrative costs	0.2-0.7
Costs of implementing the support function	0.2-0.3
Costs of internal IT systems	13.3-17.8
Costs of employee transfer	0.7-1.6
Total	10-20.3

In UKE's opinion, the costs (somewhere between €10m and €20m) would place a disproportionate burden on OPL. UKE believed that regulatory concerns arising from possible discriminatory behaviour could be effectively addressed by applying the EoO model in combination with the KPIs for non-discrimination.

UKE also analysed OPL's KPI results to test whether there were any signs of discrimination in the treatment by OPL's wholesale division for ANOs compared with OPL's own retail division. The test results were generally positive, showing little evidence of discriminatory behaviour in the provision of wholesale services.

UKE therefore concluded that the introduction of EoI was not justified and would be disproportionate in view of the additional costs to OPL.

The KPIs to measure non-discrimination, introduced by the October 2009 agreement, have been one of the key tools for monitoring compliance with the non-discrimination obligation imposed on the incumbent. A [new KPI system](#), updated in light of market developments, was implemented in December 2011. KPIs are reported [monthly](#) for the market and quarterly for UKE (see the [3Q 2020 results](#)).

Other tools used by UKE to verify compliance with the non-discrimination obligation include [the Time-To-Market](#) (TTM) procedure, and the margin squeeze and price squeeze tests. The TTM (effectively a technical replication test) applies whenever OPL introduces a retail service based on a regulated wholesale service or a commercial wholesale service. Under the TTM procedure, OPL must provide ANOs 90 days before the launch of OPL's retail service with all the necessary information to enable ANOs to create a competitive retail offer based on OPL's wholesale service.

OPL's wholesale access reference offer ([SOR](#)) also currently requires OPL to have separate wholesale and retail departments.

The SOR includes a safeguarding mechanism that gives ANOs the right to conduct inspections and checks on whether OPL's wholesale department provides regulated wholesale services under the same conditions as those provided for OPL's equivalent retail services. OPL is obliged to submit signed protocols from such inspections to UKE.

VII. SWEDEN

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Sweden	None	Telia wholesale	Telia retail	EoI and EoO	No

A. Model of separation adopted

The Swedish incumbent operator, Telia Company, is currently not subject to any form of functional or legal separation applied to its wholesale operations, either voluntarily or following a regulatory intervention.

The division of Telia that offers regulated wholesale access products operates as a part of a larger organisational unit responsible for wholesale operations and network infrastructure. This unit is subject to accounting separation and strict non-discrimination remedies based on a combination of EoI for fibre-based products and EoO for legacy copper-based products.

In 2008, Telia had voluntarily separated its access network by creating a wholly-owned infrastructure subsidiary Skanova. It also implemented several changes to its organisational and governance structure in an attempt to ensure equal wholesale terms for its rivals and its own retail operations in the provision of physical network infrastructure access over its copper and fibre networks. The separation decision was triggered by an amendment to the Swedish Electronic Communications Act, proposed in 2007, that would introduce new powers for PTS, the NRA, to impose functional separation as a new SMP remedy. The establishment of Skanova as a separate legal entity within Telia group was seen as a move to pre-empt a possible imposition of functional separation by PTS.

PTS, however, never formally endorsed the separation of Skanova, deeming it insufficient to improve non-discrimination or to bring any major improvement to the competitive conditions of access markets. Consequently, the access network separation was only briefly mentioned by PTS in its 2010 market analysis, and the full set of remedies was applied by PTS to Telia's copper- and fibre-based access products despite the voluntary legal separation.

In the next round analysis of wholesale broadband markets completed by PTS in February 2015, Telia committed to a stronger form of non-discrimination for its fibre-based access products, based on EoI and subject to economic and technical replicability.

All elements of EoI were fully implemented by Telia for the regulated fibre-based local access products on 1 December 2016 - and followed by PTS' withdrawal of the ex ante price control and cost orientation obligations from FTTH products. Once PTS had confirmed Telia's compliance with EoI, Telia moved to re-integrate Skanova as part of its larger wholesale organisation. There was no formal assessment by PTS of this integration, other than a brief statement that PTS would continue monitoring compliance with EoI. PTS stated that, as long as Telia continued to fulfil all the obligations that are part of EoI, it is not relevant for the regulator how Telia organises its operations.

B. Organisational and governance structure

Telia's organisational and governance structure has developed through a series of different regulatory steps and undertakings, summarised in the table below:

Step	Date	NRA/NCA decision	Actions
1	1 Jan. 2008	Not applicable: a voluntary separation decision by Telia	<p>Skanova Access AB established as a legally separate entity, 100% owned by Telia, offering access to physical copper- and fibre-based infrastructure to ANOs and Telia's own retail operations.</p> <p>Key organisational and governance elements of Skanova were:</p> <ul style="list-style-type: none"> Independent management, separate branding and office location

Step	Date	NRA/NCA decision	Actions
			<ul style="list-style-type: none"> Code of conduct for Skanova staff with rules to ensure non-discrimination, transparency, information sharing constraints and confidentiality Equality Access Board (EAB) monitoring compliance with the non-discrimination and equivalence undertakings. Composed of the chairman (the head of Telia's Internal Audit) and two members independent of Telia. EAB's main task was to verify compliance with a set of predefined KPIs and report to Telia's CEO every four months.
2	24 May 2010	PTS market analysis decisions on M4/2007 and M5/2007 (Flash)	<ul style="list-style-type: none"> Designation of Telia as having SMP in M4 and M5/2007 (Telia and Skanova considered by PTS to be a single economic entity) Imposition of a full set of regulatory obligations, including ex ante price control and cost-orientation based on LRIC for copper- and fibre-based access products
3	19 Feb. 2015	PTS market analysis decisions on M3a/2014 and M3b/2014 (Flash)	<ul style="list-style-type: none"> Deregulation of M3b/2014 and withdrawal of bitstream access obligations from Telia Designation of Telia as having SMP in M3a/2014 Imposition of non-discrimination obligations based on EoI for fibre-based wholesale access products and based on EoO for copper-based products Non-imposition of ex ante price controls on fibre-based wholesale products, once EoI has been implemented by 1 December 2016, subject to economic and technical replicability Requirement to publish internal and external KPIs related to the processing of orders, service delivery and maintenance
4	1 Dec. 2016	PTS confirms EoI implementation for fibre	<p>PTS confirms Telia's compliance with non-discrimination obligations based on EoI for fibre-based access products</p> <p>Withdrawal of ex ante price controls from fibre-based wholesale products</p>
5	1 Jan. 2018	Not applicable: an internal decision by Telia	<ul style="list-style-type: none"> The Equality Access Board (EAB) ceased to exist from 1 January 2017. From 1 January 2018, Skanova reintegrated into Telia as part of a larger wholesale unit Telia Wholesale.
6	8 June 2020	PTS decision amending remedies in M3a/2014	<p>Amendment of remedies affecting both fibre- and copper-based wholesale local access products, in force from 1 July 2020:</p> <ul style="list-style-type: none"> withdrawal of VULA over copper (no market demand). withdrawal of duct access obligations (no market demand and rules transposing BCRD considered sufficient). changes to the scope of KPIs obligations: reduced number of KPIs for both copper and fibre and quarterly instead of monthly reporting frequency. a shortened notice period for the decommissioning of local exchanges: reduced from 5 years to 18 months. new copper LLU access prices based on 2019 cost data;

One of the main reasons why the voluntary separation of Skanova, along with its key organisational changes and commitments, was not considered by PTS as a credible measure to achieve the equal treatment of Telia and its competitors was that, even after the separation was implemented, Telia and Skanova continued to use separate ordering and fault reporting systems: one for Telia's own retail operations and another for ANOs.

This aspect was later addressed in PTS' 2015 market analysis decision as one of the prerequisites for the implementation of the equivalence model based on EoI for Telia's new fibre-based products (as discussed below).

C. Elements of equivalence and non-discrimination

With regard to the effective non-discrimination obligation, PTS assessed, as part of its 2015 market analysis, the cost of implementing an EoI approach for both fibre- and copper-based access products.

Since 2008, Telia supplied wholesale physical infrastructure services, such as copper and fibre access and backhaul products, to ANOs and its own retail operations through its separate wholly-owned subsidiary, Skanova Access. This approach was assessed by PTS as corresponding to the EoO principle, as it allowed Telia to use separate ordering and fault reporting systems: one for its own operations and another for ANOs.

PTS further concluded that the implementation of EoI would only be proportionate for Telia's relatively new fibre-based infrastructure. Therefore, the provision of copper access products could continue to be based on the current EoO approach. For fibre access, EoI had to be implemented by 1 December 2016.

The key EoI elements include:

- the same products, including QoS, SLA and contract terms;
- the same prices, including list prices and any discount schemes;
- the same information, processes and interfaces (for pre-order, order and delivery);
- the same suppliers;
- the same billing; and
- the same internal and external KPIs to monitor compliance.

A technical replicability test (TRT) had to be implemented and applied to both fibre and copper access products within three months from the adoption of the PTS final decision. Before launching any new retail product, Telia has to carry out a TRT and notify the results to PTS. PTS may also request Telia to apply TRT to already launched products.

After PTS had confirmed Telia's compliance with EoI, on 1 December 2016, the LRIC based price control of fibre access products was removed. Currently, these products are offered subject only to an economic replicability test on selected flagship products. The flagship products comprise those standalone and bundled retail broadband offerings which are considered to be the most significant for competition in single-family (SDU) and multi-family (MDU) housing segments, respectively.

VIII. UNITED KINGDOM

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
United Kingdom	Legal	Openreach	BT	Eol	Yes

A. Model of separation adopted

The UK adopts a legal separation model. This model was implemented in July 2017 when the telecoms regulator, Ofcom, accepted commitments from the incumbent British Telecommunications (BT) to reform and legally separate its network division Openreach. In October 2018, Ofcom officially released BT from its 2005 undertakings that had established the previous regime of functional separation.

Openreach is now a distinct company within the BT Group with its own staff, management and board, together with its own strategy and a legal purpose to serve all of its customers equally. Openreach also has its own brand without the BT logo.

Before implementing legal separation in July 2017, the British incumbent had adopted functional separation. This model arose in 2004/05 when Ofcom conducted a strategic review of telecommunications, finding that there were reasonable grounds to suspect that competition was being restricted in the markets for the supply of wholesale access and backhaul network services in the telecommunications sector in the UK and in the directly related downstream retail markets.

For this reason, BT offered certain undertakings to Ofcom under section 154 of the Enterprise Act 2002 and Ofcom accepted those undertakings instead of making a (threatened) reference to the Competition Commission. BT's undertakings took effect in September 2005. Pursuant to the undertakings, BT established Openreach as a functionally separate line of business within BT.

In accordance with the undertakings of 2005, BT established the Equivalence of Access Board (EAB). The EAB had a proactive role in monitoring, reporting and advising on compliance but was not able to take any executive operational decisions.

The EAB had five members, three independents and two from BT's internal managerial staff, and was chaired by a BT non-executive board member.

The EAB actively monitored and reported on compliance, investigated complaints, carried out own-initiative investigations, set and monitored key performance indicators (KPIs) and made recommendations for change. It had a duty to inform Ofcom of breaches, to send periodic meeting minutes and to publish an annual report.

The Equality of Access Office (EAO, staffed by approximately eight people), which was a separate unit within BT, supported the work of the EAB and reported solely to the board. It had ready access to BT systems and information so as to carry out investigations and monitoring activities.

In February 2016, after the functional separation had already been completed, Ofcom published initial conclusions from a new strategic review of digital communications, setting out its competition concerns that BT had the incentive and ability to favour its own retail business when making strategic decisions about new network investments by Openreach. Ofcom announced in November 2016 that it was preparing a formal notification to the European Commission to mandate the legal separation of Openreach from BT, after BT failed to address voluntarily the regulator's competition concerns.

In March 2017, BT agreed to Ofcom's requirements for the legal separation of Openreach, notifying the regulator of voluntary commitments under section 89C of the Communications Act 2003 for the further reform of Openreach. According to Ofcom, BT agreed to all the changes needed to address the regulator's competition concerns. As a result, Ofcom did not need to impose separation through regulation, agreeing to release BT from its 2005 undertakings once the new commitments were fully in place.

B. Organisational and governance structure

Openreach, BT's legally separated network division, has its own chairman and board, with the majority of members having no affiliation with BT Group. Openreach also established a process for engaging with other telecoms companies on its planned services and investments.

The [Governance Protocol](#) and the [commitments](#) BT made to Ofcom in March 2017 define the governance structure and the relationship between BT and Openreach. Specifically, the Governance Protocol and the commitments set out the details of the membership and appointment of the Openreach Board, its Chairman, CEO and Board Audit, Risk and Compliance Committee (OBARCC), while also requiring the establishment of the BT Compliance Committee (BTCC).

OBARCC and the BT Compliance Committee (BTCC) are independent internal bodies responsible for monitoring compliance by Openreach (OBARCC) and BT (BTCC) with the commitments. OBARCC effectively replaced the EAB under the new organisational and governance structure.

OBARCC consists of three independent non-executive directors and the Openreach chairman. The Openreach chairman or one of the independent non-executive directors, at the discretion of the Openreach chairman, acts as the independent chairman of the OBARCC. The OBARCC meets at least four times a year and at any other times at the request of the OBARCC chairman. OBARCC receives reasonable resources from Openreach and enjoys internal support from the Commitments Monitoring Office (CMO)

The BTCC is a sub-committee of the BT Group Board Audit Risk Committee. The BTCC comprises three BT Group non-executive independent directors. Members of the committee are appointed by the Board Audit & Risk Committee or the BT Group Board. The BTCC meets at least three times a year, and otherwise as required. The BTCC receives internal support from the Commitments Assurance Office (CAO)

Both OBARCC and BTCC publish annual reports, which cover breaches, complaints, and overall compliance with the commitments. Both committees also publish summary bulletins during the year.

In addition to OBARCC and BTCC, Ofcom established the Openreach Monitoring Unit (OMU) to oversee the new arrangements. The OMU assesses whether the new rules are being observed, focusing on three key areas:

- implementation of the new arrangements;
- compliance with the commitments and new rules; and
- whether the arrangements provide Openreach with the level of independence necessary for it to make its own strategic decisions, and whether it is treating all of its customers equally.

In June 2018, Ofcom published an implementation report, which outlined the key steps taken by BT and Openreach to implement the new arrangements, alongside the regulator's observations and feedback from external stakeholders. Ofcom found that material progress had been made, particularly on culture and senior leadership. However, the regulator considered there was more to do to fully realise the vision of independence and to achieve better service for consumers.

In July 2019, the regulator published its first annual monitoring report, which explored how the new arrangements between BT and Openreach are working in practice. Ofcom found that real progress has been made in implementing the new arrangements but that there is more to be done. Continued focus is required by both BT and Openreach to strengthen Openreach's strategic independence and engagement with its customers.

In November 2020, the regulator published its second annual monitoring report. Overall, BT and Openreach continue to make good progress in strengthening and safeguarding Openreach's strategic independence. However, according to Ofcom there is no room for complacency. Continuous focus and vigilance will be needed to ensure that such progress continues, is fully embedded and sustainable.

Ofcom did not propose or threaten any additional regulatory intervention because industry feedback generally shows Openreach is improving its engagement with its wholesale customers in many areas - developing its independent identity and building and maintaining constructive commercial relationships.

However, some feedback indicates that not all stakeholders think the legal separation between BT and Openreach is working as they consider it should. For example:

- some industry stakeholders have continued to raise their concerns about the potential for undue BT Group influence over Openreach's pricing decisions; and
- Ofcom also noted some concerns around coincidences of timing where Openreach has deployed fibre in the same locations that competing communication providers have decided to rollout their networks. This could give rise to fears that Openreach may have used information provided in the course of requests for physical infrastructure access.

C. Elements of equivalence and non-discrimination

In accordance with Ofcom's 2018 WLA decision (wholesale local access - market 3a), Openreach has to provide key WLA services (VULA and LLU) on an EoI basis.

In regard to duct and pole access, Ofcom imposed a no undue discrimination condition, falling short of full EoI. While the non-discrimination remedy is not as comprehensive as full EoI, Ofcom interprets the condition as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of ducts and poles, unless BT can demonstrate that a difference in respect of a specific process step or sub-product is justified.

Telecoms providers also must have access to digital maps with BT's (Openreach's) duct and pole network records, including detailed location information and the extent of any spare capacity.

In June 2019, Ofcom issued a decision on the review of a new market for wholesale access to fixed telecoms physical infrastructure. The decision gives telecoms operators unrestricted access to BT's (Openreach's) network of underground ducts and telegraph poles.

Once again, the regulator imposed an obligation of no undue discrimination falling short of EoI. BT must offer all customers the same terms and conditions, including prices, and apply the same processes unless there is a reason to justify acting otherwise.

IX. AUSTRALIA

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
Australia	Structural	NBN	Telstra retail	General	No

A. Model of separation adopted

Australia experienced a gradual change from functional to structural separation of the vertically integrated incumbent, Telstra. The regulatory context of Telstra's voluntary structural separation undertaking (SSU) was critically related to the creation of a structurally separated and state-funded Australian National Broadband Network project (NBN).

The NBN, a wholly owned government business enterprise³, was established in 2009 as a national wholesale-only broadband network available on equivalent terms to all access seekers. The initiative aimed to create better competitive conditions in the Australian telecommunications markets by putting all players on an equal footing in the future provision of wholesale services, and to ensure that all Australians would have access to fast internet connection at affordable prices.

Since its creation, the NBN has increased the rollout of a mix of technologies (FTTx, hybrid fibre coaxial (HFC), fixed wireless and satellite) to achieve connectivity in different areas, prioritising infrastructure deployments in areas with poor connectivity. The main **objective** of the NBN is to connect the whole Australian population to broadband with speeds of at least 25 Mbps and, for 90% of the fixed-line network, to speeds of at least 50 Mbps.

To avoid infrastructure duplication and to facilitate the efficient roll-out of the national broadband network, NBN and Telstra signed a **binding agreement** on 23 June 2011. According to the terms of the agreement, NBN has the right to access Telstra's infrastructure over a minimum 35-year period, specifically:

- ducts and pits, through which the NBN fibre will be connected to each premise;
- dark fibre for backhaul purposes; and
- rack space in Telstra exchanges.

The post-tax net present value of this deal for Telstra was estimated to be AUD\$9bn (€5.6bn) in June 2010.

Prior to the start of the SSU in March 2012, Telstra was subject to a functional separation regime. However, according to ACCC, this form of separation, intended to promote equivalence between Telstra's wholesale and retail customers, was largely ineffective in addressing Telstra's ability and incentive to discriminate against its competitors.

With the SSU of 2012, Telstra committed to achieve structural separation by 1 July 2018 (this term was then **extended** by the government and structural separation achieved on 1 July 2020), by progressively decommissioning its copper customer access network and HFC broadband service on an area by area basis (also called the 'migration plan' phase).

Prior to the transition to the NBN, Telstra was subject to obligations as to its organisational structure and equivalence, such as maintaining separate wholesale, retail and network services business units, and ensuring EoO on services and processes.

³ Nbn is **wholly owned** by the Commonwealth of Australia as a Government Business Enterprise (GBE), incorporated under the Corporations Act 2001 and operated in accordance with the Public Governance, Performance and Accountability Act 2013 (PGPA Act)

B. Organisational and governance structure

Telstra structural separation was completed on 1 July 2020. The previous model of functional separation of Telstra, adopted before the transition to the NBN, is summarised in the table below:

Measure	Description
Physically separated business units	Telstra maintains the following separate business units: <ul style="list-style-type: none">• wholesale business unit• retail business unit• network services business unit
Incentive remuneration for employees	Separate incentive scheme and bonus for staff working at the wholesale and network business units
Independent Telecommunications Adjudicator (ITA)	Telstra established ITA, an independent body for the resolution of equivalence and NBN migration disputes between Telstra and its wholesale customers
Audit committee and director of equivalence	The audit committee oversees Telstra's compliance with the SSU and the activities of the director of equivalence. The director of equivalence puts in place effective and appropriate mechanisms for monitoring compliance with the SSU.

Unlike in Iceland, Ireland, Italy and the UK, Telstra did not have a supervisory committee but it was subject to a number of reporting obligations. Among the main ones were:

- annual compliance report: Telstra had to report directly to the Australian Competition and Consumer Commission (ACCC) in relation to its SSU compliance; and
- monthly confidential compliance report: Telstra had to report to the ACCC any equivalence breaches identified by Telstra or a wholesale customer.

According to the SSU, Telstra established an independent dispute resolution body called the Office of the Independent Telecommunications Adjudicator (ITA). The ITA, whose appointment was approved by the ACCC, operated a fast-track dispute resolution process to investigate and resolve equivalence complaints under the SSU, as well as disputes arising under Telstra's migration plan.

The ITA was an independent person who acted as an expert and not as an arbitrator. The ITA's decisions were generally final and binding.

C. Elements of equivalence and non-discrimination

NBN is subject to a general non-discrimination obligation towards access seekers under the [Telecommunications Act](#).

Before 1 July 2020 (during the transition phase to the NBN), Telstra had to provide equivalence measures based on EoO and ensure transparency in the supply of regulated fixed network services to its wholesale customers.

In the [list](#) of equivalent services and their comparable retail services, Telstra had to offer on an EoO basis services such as WLR, LLU, terminating access, line sharing service, access to ADSL, and the use of exchange building facilities.

Under the SSU, Telstra had to publish for each regulated service and its comparable retail service the processes and systems used for:

- service qualification;
- service activation and provision; and
- the rectification of faults.

X. NEW ZEALAND

Country	Form of separation	Infrastructure	Retail	Non-discrimination	Supervisory committee
New Zealand	Structural	Chorus	Telecom NZ	Eol	No

A. Model of separation adopted

According to Cullen International research, New Zealand provides the only known case of voluntary structural separation.

In December 2011, the vertically integrated (but functionally separated) incumbent Telecom NZ (rebranded as Spark in 2014) split itself into two separately listed companies under different ownership:

- Chorus Ltd: the fixed infrastructure company; and
- Telecom NZ: the fixed retail service provider.

Telecom NZ decided on structural separation for strategic reasons and as a means of relieving itself from the operational complexities related to the then-existing regulations on functional separation.

Structural separation was the only way for Telecom NZ to take part in the government's Ultra- Fast Broadband network (UFB) initiative introduced in 2009. The UFB plan aimed to cover 87% of the population with FTTH by the end of 2022, mainly with public money. The UFB plan was implemented through a public-private partnership, with a government agency charged to oversee the UFB. Crown Infrastructure Partner Limited (Crown), the government agency, would contract with telecoms operators but only those that sold infrastructure services but did not also offer retail services to consumers or businesses. Therefore, Telecom NZ had two choices:

- implement separation in order to be able to bid in the UFB tender; or
- not take part in the UFB programme, i.e. in practice competing with the government programme.

In addition, Telecom NZ could benefit from the structural separation because this would allow the removal of its existing onerous functional separation undertakings that had been imposed by the government in 2006. Telecom NZ had found that these functional separation undertakings were increasing the company's costs, creating process difficulties, adding complexity and making it hard for Telecom NZ to serve customers well. For instance, functional separation had required a massive overhaul of Telecom NZ's IT systems just to ensure that the retail unit staff could not see details of the agreements made by the other (access and wholesale) units.

B. Organisational and governance structure

On 1 December 2011, Telecom NZ implemented structural separation, with its network access division, Chorus, becoming a standalone, publicly listed company. Chorus' main shareholders are all investments companies (e.g. HSBC, JP Morgan Citibank, BNP Paribas etc.)

Chorus owns and operates the fixed line access infrastructure, including: the copper network; fibre access network; ducts and manholes; major telephone exchange buildings; and electronic equipment, such as DSLAMs and Ethernet aggregation switches. Telecom NZ retained the mobile and PSTN networks, and a national backhaul network.

Chorus is listed on the New Zealand stock exchange, with its own independent board of eight directors (seven independent directors and the managing director). **Ownership restrictions** apply to Chorus, with the Crown's approval required if:

- any person or company acquires a shareholding of 10% or more; or
- any foreign company acquires a shareholding of more than 49.9%.

As noted above, prior to the structural separation, Telecom NZ had been functionally separated. In December 2006, the government passed a Telecoms Amendment Act, requiring the functional separation of the vertically integrated incumbent. This model of separation was inspired by the form of functional separation previously adopted in the UK for British Telecom.

The regulatory steps of Telecom NZ's model of separation are summarised in the table below:

Step	Date	Source	Actions
1	18 Dec. 2006	Telecommunications Amendment Act (No 2) 2006	With the aim to promote competition in the telecoms market by introducing transparency, non-discrimination and EoI obligations, the government required the establishment of three separated business units: <ul style="list-style-type: none"> • Access network unit: managing the local access network (what became Chorus). • Wholesale unit: providing wholesale products to service providers (without owning the assets). • Retail unit: providing fixed-line, mobile and internet services.
2	31 March 2008	Minister for Communications and Information Technology: Telecom Operational Separation	Telecom NZ implemented functional separation and established a supervisory committee
3	1 Dec. 2011	Telecommunication Amendment Act with structural separation undertakings 2011	Telecom NZ (rebranded as Spark in 2014) split into two listed companies under different ownership: <ul style="list-style-type: none"> • Chorus Ltd: the fixed infrastructure company; and • Telecom NZ: the fixed retail service provider

The functional separation undertakings of 2006 provided for the establishment of a supervisory committee with monitoring tasks and duties similar to those of the Equality Access Board in UK and the Organo di Vigilanza in Italy. Telecom NZ established the Independent Oversight Group (IOG) in 2008 to monitor, investigate and report potential breaches of the undertakings to Telecom NZ's board and to the Commerce Commission. The IOG had five members, three independent and two appointed by Telecom NZ after consultation with the Commerce Commission.

The IOG ceased to exist after the 2011 structural separation, with the Commerce Commission now having the responsibility to monitor Chorus' compliance with the new structural separation undertakings.

C. Elements of equivalence and non-discrimination

Chorus [submitted](#) equivalence and non-discrimination undertakings on 6 October 2011, in accordance with [Part 2A](#) of the New Zealand Telecommunications Act.

Chorus must ensure that access seekers can purchase access on an EoI basis, with the same timescales, terms and conditions, and the same systems and processes. Chorus must not discriminate between access seekers or favour any Chorus-related party.

Chorus [developed](#) KPIs in consultation with the Commerce Commission to monitor compliance with its equivalence and non-discrimination obligations. In addition, Chorus developed an employee code of conduct and is subject to certain reporting obligations.

Chorus is obliged to disclose any material breach of the abovementioned undertakings to the Commerce Commission as soon as is reasonably practicable (but in any event no later than 20 working days) after Chorus becomes aware of that breach.

As far as fibre is concerned, Chorus will be [subject](#) to price-quality and information disclosure regulation from 1 January 2022.

The price-quality regulation will regulate the total revenue Chorus can recover from providing regulated fibre services, and the quality at which those services are provided. The price-quality path is intended to create incentives for Chorus to act in ways that are consistent with the long-term benefit of

end users, such as creating incentives to (i) invest in its network, (ii) innovate and improve efficiency, and (iii) deliver services at a level that meet end-user demands.

Information disclosure regulation will require businesses to periodically publish information about their performance. This will include important data on pricing, current and future expenditure, quality performance, and financial statements. In the future, the Commerce Commission will provide analysis of this information to help interested parties understand how fibre providers are performing individually and when compared to others.

ANNEXES

Annex I - Service Level Agreements (SLAs) and Service Level Guarantees (SLGs)

As part of ensuring effective non-discrimination, the SMP operator may be required to implement specific SLAs whereby it is required to provide access to the regulated wholesale services with a specified level of quality. SLGs form an integral part of SLAs and specify the level of compensation payable by the SMP operator if it provides wholesale services with a quality inferior to that specified in the SLA.

Country	SLAs imposed as part of SMP obligations? In Market 3a and/or 3b/2014?	For which specific products and for which activities	Procedures for setting/reviewing the specific SLA values?	SLGs (compensation obligations) corresponding to SLAs imposed?
Czech Republic	Yes SLAs were imposed on the SMP in both markets in the fourth market review, completed in 2018. M3a decision M3b decision	Copper and fibre unbundling, VULA, BSA SLAs must include individually for each access service: <ul style="list-style-type: none"> • Basic level (delivery, fault repair, migration, access to ordering systems) • Advance level (fault repair) 	Set by the SMP operator, CETIN. See for example SLAs for unbundling Annex 9 for the basic level, Annex 18 for the advance level	Yes Annex 11 on sanctions
Denmark	Yes Imposed as part of access obligations in both markets: ERST decision on M3a (p. 222); ERST decision on M3b (p. 219) 17 Aug. 2017	Imposed for all access products that are regulated in M3a and M3b/2014: fibre and copper unbundling, VULA and BSA. SLAs must cover: <ul style="list-style-type: none"> • access to electronic ordering system (opening and response times) • delivery • fault repair • migration 	TDC was required to develop SLAs in consultation with the industry via NGA-forum, an industry self-regulatory body specifically set up to monitor implementation of access obligations in M3a and M3b and resolve any open implementation issues. NGA-forum is chaired by a representative of an ANO and ERST, the NRA, acts as its secretariat (see Annex 3 to both decisions on M3a and M3b for details). SLAs together with corresponding SLGs must be included in the reference offer (see Annex 8 to both decisions for the minimum scope of the reference offers) SLAs are included as a specific annex to the reference offer for each regulated product (e.g. SLAs for fibre BSA)	Yes TDC was required to define SLGs corresponding to each respective SLA parameter in consultation with the industry via NGA-forum. ERST decisions set out the key principles for defining SLGs and procedures for default compensation to ANOs if SLAs' performance targets have not been met.

Country	SLAs imposed as part of SMP obligations? In Market 3a and/or 3b/2014?	For which specific products and for which activities	Procedures for setting/reviewing the specific SLA values?	SLGs (compensation obligations) corresponding to SLAs imposed?
Iceland	Yes In both M3a and 3b/2014 as part of non-discrimination obligations PTA Decision no.21/2014 on SMP designation and imposition of remedies in the wholesale markets M4 and M5/2007, 13 August 2014 PTA proposed to maintain the same obligations in the new draft analysis of M3a and M3b/2014, published for consultation in April-July 2020.	Imposed for all access products that are regulated in both markets: fibre and copper unbundling, VULA and BSA. SLAs must cover: <ul style="list-style-type: none"> • order processing • delivery • maintenance service • switching • fault repair 	By PTA decision Mila was required to publish SLAs and corresponding SLGs on its website within 6 months from publication of the market analysis decision. It was also required to conclude SLA agreements with all of its counterparties no later than 6 months after the publication of the market analysis decision.	Yes
Ireland	Yes on both markets ComReg decision of 23 Nov. 2018	Copper LLU/SLU, fibre VULA, civil engineering infrastructure, BSA and access to the Unified Gateway (eir's order management and fault handling system). SLAs for eir's wholesale products include details on provisioning, fault repair and migration.	In consultation with ANOs ComReg set periods for the negotiation procedure	Yes
Italy	Yes Markets 3a and 3b/2014 AGCOM decision and Annex III Document V adopted on 8 Aug. 2019	Products: WLR, copper LLU, copper bitstream, SLU, VULA FTTC, bitstream NGA FTTC, VULA FTTH, bitstream NGA FTTH. Activities: Transparency, provisioning and assurance	Set by the NRA after public consultation	Yes
Poland	No UKE's latest market review decision of 22 Oct. 2019 only imposed the obligations of KPI parameters (without target values), EoO and economic replicability test.	Not applicable	Not applicable	Not applicable

Country	SLAs imposed as part of SMP obligations? In Market 3a and/or 3b/2014?	For which specific products and for which activities	Procedures for setting/reviewing the specific SLA values?	SLGs (compensation obligations) corresponding to SLAs imposed?
Sweden	<p>Yes</p> <p>On M3a/2014</p> <p>PTS decision of 19 Feb. 2015</p> <p>Imposed as part of general conditions for access provision (section 6.11.10 and 6.11.10)</p> <p>(M3b/2014 is deregulated)</p>	<p>For physical local copper and fibre wholesale access products</p> <p>Telia is required to specify SLAs covering:</p> <ul style="list-style-type: none"> • ordering procedures • delivery times • delivery precision • fault repair time • fault repair precision • procedures for switching operator 	Set by the NRA decision	Yes
United Kingdom	<p>Yes</p> <p>Market 3a/2014</p> <p>Wholesale local access (WLA) market decision of 28 March 2018</p> <p>Quality of service for WLR, MPF and GEA decision of 28 March 2018</p>	<p>LLU (MPF) and VULA (GEA)</p> <p>Provisioning and repair</p> <p>(i) availability of an appointment for the provision of the service;</p> <p>(ii) attending appointments for the provision of the service;</p> <p>(iii) completion of the provision of the service;</p> <p>(iv) completion of the transfer of the service;</p> <p>(v) line working at completion of provisioning process;</p> <p>(vi) disconnections made in error;</p> <p>(vii) fault repair times;</p> <p>(viii) attending fault repair appointments; and</p> <p>(ix) availability of the relevant operational support systems by which requests for service provision, transfers and fault repair are made as applicable.</p> <p>(WLA decision annex 33 – legal instruments)</p>	Set by the NRA decision	Yes

Annex II - Key performance indicators M3a and 3b/2014

The table provides details of KPI obligations that NRAs imposed on SMP operator as a remedy, if any, on the market 3a/2014 and/or market 3b/2014 in the latest market review. In addition, the table shows if there are separate internal and external KPIs published to help measure any differences between the QoS for wholesale inputs that the incumbent provides to its own downstream retail business compared with the QoS it provides for wholesale inputs to other ANOs.

Country	KPIs imposed as part of non-discrimination/transparency obligations on M3a and/or M3b/2014?	For which specific products?	Reporting and publication procedures	Separate reporting of internal and external KPIs?	Procedures for setting/reviewing the specific KPI values
Czech Republic	No KPI imposed in the fourth market review because the SMP (CETIN) has no retail arm since 2015 when the retail arm (O2) was legally separated from CETIN.	Not applicable	Not applicable	Not applicable	Not applicable
Denmark	Yes Imposed as part of transparency obligations in both markets: ERST decision on M3a (p. 278) ERST decision on M3b (p. 270) 17 Aug. 2017	Imposed for all access products that are regulated in M3a and M3b/2014: fibre and copper unbundling, VULA and BSA. KPIs must cover: <ul style="list-style-type: none"> access to electronic ordering system (opening and response times) delivery fault repair migration 	TDC is required to publish monthly KPIs on its website (transparent, easily accessible and not password protected) on quarterly basis. KPIs for Q2 2020 No specific audit requirements	Yes All KPIs must be reported, respectively, for external and internal customers.	TDC was required to develop KPIs in consultation with the industry via NGA-forum, an industry self-regulatory body specifically set up to monitor implementation of access obligations in M3a and M3b and resolve any open implementation issues. NGA-forum is chaired by a representative of an ANO and ERST, the NRA, acts as its secretariat (see Annex 3 to both decisions on M3a and M3b for details)
Iceland	Yes In both M3a and 3b/2014 as part of non-discrimination obligations PTA Decision no.21/2014 on SMP designation and imposition of remedies in the wholesale markets M4 and M5/2007, 13 Aug. 2014	Imposed for all access products that are regulated in both markets: fibre and copper unbundling, VULA and BSA. KPIs must cover: <ul style="list-style-type: none"> order processing delivery 	Mila was required to publish KPIs on its website within 6 months from publication of the market analysis decision and on monthly basis thereafter. The KPIs are not publicly available (password-protected website)	Yes All KPIs must be split between internal and external transactions	Imposed by the NRA decision, no particular review procedure specified

Country	KPIs imposed as part of non-discrimination/transparency obligations on M3a and/or M3b/2014?	For which specific products?	Reporting and publication procedures	Separate reporting of internal and external KPIs?	Procedures for setting/reviewing the specific KPI values
	PTA proposed to maintain the same obligations in the new draft analysis of M3a and M3b/2014, published for consultation in April-July 2020.	<ul style="list-style-type: none"> • maintenance service • switching • fault repair 			
Ireland	<p>Yes</p> <p>ComReg decision of 23 Nov. 2018</p> <p>eir shall continue publishing KPIs for regulated markets in the content as defined by ComReg decision on KPIs of 29 June 2011 (for markets of retail narrowband access, wholesale physical network infrastructure access, wholesale broadband access and terminating segments of wholesale leased lines)</p> <p>ComReg wants to develop a set of KPIs for access to civil engineering infrastructure.</p>	<p>Copper LLU/SLU, copper and fibre BSA</p> <p>Provisioning and repair</p>	eir is obliged to publish quarterly all of the proposed KPIs in a single place to enable explicit comparisons between wholesale outputs and the equivalent inputs provided to eir retail (ComReg decision on KPIs of 29 June 2011)	<p>Yes</p> <p>eir publishes KPIs, respectively, for external and internal customers.</p> <p>Equivalence KPIs April-June 2020</p>	Data from controls (e.g. fault repair time for access seeker versus fault repair time for eir's downstream arm) shall be stored in such a manner which allows review and audit either as part of eir's regulatory assurance process or by a third party as appropriate.
Italy	<p>Yes</p> <p>In M3a and M3/b 2014</p> <p>Two set of KPIs: KPIs-nd and KPI-QoS</p> <p>(AGCOM decision 348/19/CONS of 8 Aug. 2019 and decision 395/18/CONS of 25 July 2018 Annex B)</p> <p>TIM is moreover subject to the obligation (set in 2008 undertakings by AGCom Decision 718/08/CONS) to publish a set of KPIs about provisioning, assurance and system availability and performance</p>	<p>Products:</p> <p>WLR, copper LLU, copper bitstream, SLU, VULA FTTC, bitstream NGA FTTC, VULA FTTH, bitstream NGA FTTH.</p> <p>Activities:</p> <p>Provisioning (e.g. migration and activation average time)</p> <p>Assurance (e.g. fault repair activities)</p> <p>CRM Now (e.g. system availability and CRM performance index)</p> <p>KPI of QoS (e.g. backlog, rejects)</p>	<p>Reporting</p> <p>TIM sends monthly KPI-nd report to AGCOM and Italian supervisory committee (OdV).</p> <p>TIM sends two-weekly KPI-QoS reports to AGCOM and OdV.</p> <p>Publication</p> <p>Yes for KPIs 718/08/CONS</p> <p>No for two set KPIs imposed by decision 348/19/CONS.</p> <p>If KPI-nd 395/18/CONS show a discrimination problem OdV must inform AGCOM and TIM's BoDs</p>	<p>Yes</p> <p>All KPIs must be reported, respectively, for external and internal customers.</p>	<p>Yes</p> <p>Reviewing is possible following AGCOM's procedures defined in decision 395/18/CONS.</p> <p>It is possible to call OAOs and the incumbent to discuss about KPI reviewing</p> <p>The reviewing procedure is ongoing and is aimed to simplify the existing set of KPI-nd and to overcome any overlap</p>

Country	KPIs imposed as part of non-discrimination/transparency obligations on M3a and/or M3b/2014?	For which specific products?	Reporting and publication procedures	Separate reporting of internal and external KPIs?	Procedures for setting/reviewing the specific KPI values
Poland	<p>Yes</p> <p>On both markets (partially deregulated)</p> <p>UKE decisions of 22 Oct. 2019 include a list of KPI parameters without target levels (Annex 3 of the decisions – 3a/2014 and 3b/2014)</p> <p>UKE refers for more details to the KPI system adopted in 2014 and updated as required in consultation with the industry.</p>	<p>copper and fibre LLU, BSA, physical infrastructure access, including ducts access to information, provisioning, fault repair and migration</p>	<p>Orange Polska makes KPIs available monthly to the registered wholesale partners using Orange information system interface and reports quarterly to UKE (3Q 2020).</p>	<p>Yes</p> <p>All KPIs must be reported, respectively, for external and internal customers.</p>	<p>For each KPI a target level and acceptable variation are defined. The system is based on a traffic light assessment, with the red-light indicating problems in a specific area.</p> <p>UKE analyses wholesale and Orange retail KPIs for defined parameters:</p> <ul style="list-style-type: none"> • in long run and short run • aggregate wholesale vs. Orange retail • individual wholesale partners' KPIs to see whether Orange discriminates any ANO compared to the other ANOs
Sweden	<p>Yes</p> <p>On M3a/2014</p> <p>PTS decision of 19 Feb. 2015</p> <p>Imposed as part of transparency obligation (section 6.17)</p> <p>(M3b/2014 is deregulated)</p>	<p>For physical local copper and fibre wholesale access products</p> <p>Telia is required to publish the following monthly KPIs on quarterly basis (until July 2020, on monthly basis):</p> <ul style="list-style-type: none"> • ordering precision • delivery times • delivery precision • fault repair time • fault repair precision • simple installations 	<p>Quarterly KPIs are published by PTS, the NRA, on the dedicated website.</p>	<p>Yes</p> <p>All KPIs must be reported, respectively, for external and internal customers.</p>	<p>Set out in the NRA market analysis decision</p>

Country	KPIs imposed as part of non-discrimination/transparency obligations on M3a and/or M3b/2014?	For which specific products?	Reporting and publication procedures	Separate reporting of internal and external KPIs?	Procedures for setting/reviewing the specific KPI values
United Kingdom	Yes M3a/2014 Wholesale local access (WLA) market decision of 28 March 2018 Quality of service for WLR, MPF and GEA decision of 28 March 2018	LLU (MPF) and VULA (GEA) Provisioning and repair (see p. 154-158 of Quality of service for WLR, MPF and GEA decision)	All KPIs must be provided on a monthly basis to Ofcom and industry Some KPIs must be published by Openreach quarterly	No Openreach does not provide retail services and is a legally distinct company from BT.	By decision of the NRA (see Quality of service for WLR, MPF and GEA decision)

Annex III - Technical replicability test M3a and 3b/2014

Independently of the exact equivalence concept imposed by the NRA, i.e. EoI or EoO, where the NRA decides that a non-discrimination obligation is appropriate, proportionate and objectively justified, it is important for a level playing field to ensure that alternative access seekers can technically replicate the retail offer of the SMP operator on the basis of the regulated wholesale input they receive. This table provides details of technical replicability tests (TRT) that the NRAs imposed on the SMP operators as a remedy, if any, on the market 3a/2014 and/or market 3b/2014 in the latest market review.

Country	TRT imposed in M3a and M3b/2014?	For which retail products	To be carried out by the SMP operator or NRA?	To be carried out before or after product launch?
Czech Republic	No	Not applicable	Not applicable	Not applicable
Denmark	Yes Imposed as part of non-discrimination obligations in both markets: ERST decision on M3a (p. 268) ERST decision on M3b (p. 260) 17 Aug. 2017	For all new or substantially modified retail products that are based on the regulated wholesale products in both markets.	SMP operator, TDC TDC is required to send detailed documentation for each product to the NRA, ERST. The detailed scope of the test is defined in ERST market analysis decisions.	Before product launch: <ul style="list-style-type: none"> • 5 working days – for new retail products that are based on already existing wholesale products and only require some changes to the wholesale processes • 20 working days - for new retail products that are based on new or modified wholesale products
Iceland	Yes In both M3a and 3b/2014 as part of non-discrimination obligations PTA Decision no.21/2014 on SMP designation and imposition of remedies in the wholesale markets M4 and M5/2007, 13 Aug. 2014 PTA proposed to maintain the same obligations in the new draft analysis of M3a and M3b/2014, published for consultation in April-July 2020.	For copper- and fibre-based products, not specified further	By the NRA To ensure that Mila complies with the non-discrimination obligation, PTA can perform a technical and/or economic investigation as to whether unrelated parties can replicate the retail product offer of units within the Skipti Group or other related parties in a sustainable manner.	After product launch Should PTA conclude that unrelated parties cannot replicate the product offer of the Skipti Group or other related parties for technical or economic reasons, PTA can instruct Mila to alter its product offer and/or offer new wholesale products to enable unrelated parties to replicate the product offer of related parties on normal commercial grounds

Country	TRT imposed in M3a and M3b/2014?	For which retail products	To be carried out by the SMP operator or NRA?	To be carried out before or after product launch?
Ireland	No However, ComReg imposed EoI for access to civil engineering infrastructure (CEI) which comprises ducts and poles (decision of 23 Nov. 2018) ComReg found that eir's process of assessment of CEI availability for access seeker's request is identical with the assessment of CEI availability for self-supply purposes in general.	Not applicable Where access to CEI is not available eir must provide access to dark fibre where dark fibre is reasonably available. If dark fibre is made available due to unavailability of CEI then the access seeker shall have the same opportunity to build his network infrastructure as when CEI would have been available.	Not applicable	Not applicable
Italy	Yes M3a and M3b/2014 Art. 42 AGCOM decision 348/19/CONS and 584/16/CONS as amended	All TIM's residential fibre and copper offers and bundles, including promotions	NRA	Pre-launch TIM must publish on its website changes of technical conditions to provide services three months in advance their implementation. In case of launch of new services, along with complying with the obligation above, TIM must also wait they would be effectively available for ANOs for one month before being able to use them.
Poland	No UKE's latest market review decision of 22 Oct. 2019 only imposed the obligations of KPI parameters (without target values), EoO and economic replicability test.	Not applicable	Not applicable	Not applicable
Sweden	Yes On M3a/2014 PTS decision of 19 Feb. 2015 (p. 189) (M3b/2014 is deregulated)	Applies only to retail products based on regulated wholesale fibre-based access products, i.e. physical local fibre access (covering all necessary wholesale components and procedures, including information access, collocation and delivery)	SMP operator, Telia Telia was also required to develop a TRT methodology and submit to PTS for approval within three months from the entry into force of the PTS decision	Before product launch (notice period not specified) PTS may also require Telia to run TRT for already launched retail services.

Country	TRT imposed in M3a and M3b/2014?	For which retail products	To be carried out by the SMP operator or NRA?	To be carried out before or after product launch?
United Kingdom	<p>No</p> <p>In its 2018 WLA decision Ofcom said that: <i>“We are satisfied that the regulated wholesale inputs, which have been carefully developed to ensure they are fit for purpose, ensure that competitors can technically replicate BT’s fibre-based and copper loop-based retail offerings. Consequently, having taken utmost account of the Costing and Non-discrimination Recommendation in relation to technical replicability, we consider that the additional imposition of a technical replicability test is not appropriate or proportionate. We are satisfied that, where access seekers demand network access in the WLA market in the UK, the necessary provisions are in place to enable them to access regulated wholesale inputs that enable them to technically replicate BT’s downstream retail offers.”</i></p>	<p>Not applicable</p>	<p>Not applicable</p>	<p>Not applicable</p>