

Investigation Report

File No.	ACMA2018/409-1
Carriage Service Provider	Telstra Corporation Limited ACN 051 775 556
Type of Service	Carriage Service Provider
Relevant Legislation/Code	- <i>Telecommunications Act 1997</i> - <i>Industry Code (C555:2017) Integrated Public Number Database (IPND)</i>
Date	13 December 2018

Findings

The Australian Communications and Media Authority (the **ACMA**) finds that, on multiple occasions, Telstra Corporation Limited ACN 051 775 556 (**Telstra**):

- > contravened subsection 101(1) of the *Telecommunications Act 1997* (the **Act**), which requires a carriage service provider (**CSP**) to comply with the service provider rules that apply to it, by failing to give the IPND Manager¹ the information it reasonably required to provide and maintain the Integrated Public Number Database (**IPND**), thereby contravening the service provider rule in clause 10 of Schedule 2 to the Act;
- > contravened the following clauses of the *Industry Code (C555:2017) Integrated Public Number Database (IPND)* (the **IPND Code**):
 - 4.2.1 – because Telstra, a CSP that provides carriage services to customers using public numbers², failed to provide the relevant public number customer data³ to the IPND Manager in respect of certain carriage services Telstra supplies;
 - 4.2.11 – because Telstra failed to ensure that certain public number customer data it provided to the IPND Manager was accurate, complete and up to date; and
 - 4.2.25 – because Telstra failed to supply to the IPND Manager certain public number customer data updates that occurred on one business day, by the end of the next business day.

¹ The Integrated Public Number Database is managed by Telstra as required by section 10 of the *Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997*. Unless stated otherwise, in this report, *Telstra* refers to Telstra in its capacity as a CSP, and *IPND Manager* refers to Telstra in its capacity as the manager of the IPND.

² In this report, *number* and *public number* mean a number under the *Telecommunications Numbering Plan 2015*.

³ As defined in the IPND Code, where it is also referred to as 'PNCD' (public number customer data).

Background

1. This report details findings of an investigation conducted by the ACMA under paragraphs 510(1)(a) and (c) of the Act into whether Telstra contravened the Act and/or an industry code registered under Part 6 of the Act.
2. The investigation commenced on 16 July 2018. On 18 July 2018, the ACMA issued Telstra a notice under section 521 of the Act requiring the production of documents and information (the **Notice**).
3. Telstra responded to the Notice on 31 August 2018.
4. On 11 October 2018, the ACMA issued preliminary findings to Telstra. Telstra responded on 2 November 2018, providing additional information relevant to the ACMA's investigation.

Relevant facts

5. Telstra is a CSP within the meaning of the Act⁴. Telstra supplies, fixed-line and mobile telecommunications services to business, government and residential consumers. Telstra also provides telecommunications services on a wholesale basis to other retail CSPs.
6. Telstra is a 'Data Provider' within the meaning of clause 2.2 of the IPND Code.⁵

The IPND and its legislative framework

7. The IPND is intended to be an industry-wide database of all public telephone numbers. It was established in 1998 and is managed by Telstra as required by section 10 of the *Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997 (Telstra Licence Conditions)*. The maintenance of the IPND by the IPND Manager is supported by, among other things:
 - a. a service provider rule requiring a CSP that supplies a carriage service to an end-user, and where that user has a public number, to give the IPND Manager such information as it reasonably requires in connection with the IPND Manager's fulfilment of its obligation to provide and maintain the IPND⁶; and
 - b. the IPND Code, which is an industry code registered by the ACMA under Part 6 of the Act, and which sets out procedures relating to the storage of information in the IPND and the transfer of information to and from the IPND Manager.
8. The IPND Code, and the associated IPND Data Guideline (G619:2017), also refer to the *Integrated Public Number Database (IPND) Data Users and Data Providers Technical Requirements for IPND* (the **Technical Requirements**). The Technical Requirements, which are issued by Telstra as IPND Manager and made with the agreement of a majority of relevant Data Users⁷ and Data Providers (see clause 7.1.8 of the IPND

⁴ See section 87 of the Act.

⁵ 'Data Provider' is defined to mean a CSP who has an obligation to provide PNCD to the IPND Manager, or an entity acting on behalf of the CSP, and who is registered with the IPND Manager.

⁶ Subsection 101(1) of the Act requires CSPs to comply with the service provider rules, and paragraph 98(1)(a) of the Act provides that the service provider rules include the rules set out in Schedule 2 to the Act. Clause 10 of Schedule 2 to the Act deals with the information that CSPs must give to Telstra in association with its IPND Manager responsibilities.

⁷ As defined in clause 2.2 of the IPND Code.

Code), set out the detailed operational and technical requirements for the submission of information by Data Providers to the IPND Manager.

9. The information in an IPND record includes customer name and address, phone number, the type of service, whether the service is listed or unlisted, and details about the service provider. The Technical Requirements (at clause 6.1.2) specify the information that is included, or which can be included, in an IPND entry. An IPND record includes a mandatory field, called the 'Service Status Code', which is used to indicate whether a service is connected or disconnected.
10. Under Part 13 of the Act and the Telstra Licence Conditions, the information in the IPND can only be used for specific purposes. Critical users of the IPND include the emergency call service, the emergency warning system, and national security and law enforcement agencies. These bodies use IPND information to protect life and property and to investigate serious crime. Failure to provide accurate, timely and current information to critical users can have serious consequences. For example, failure to provide location information associated with a call to the Triple Zero emergency call service could place a caller's life at risk. Non-critical users of IPND data include publishers of public number directories and researchers conducting permitted research.
11. There are several ways in which a Data Provider can identify potential errors occurring when uploading data to the IPND, and any discrepancies between its own customer data and that stored in the IPND, including:
 - > by reference to clause 4.2.28 of the IPND Code, which allows a Data Provider to obtain an extract of its public number customer data as a full set of records or a subset of records based on criteria agreed between the Data Provider and the IPND Manager for reconciliation purposes.
 - > by reference to clauses 6.1.6 and 6.1.7 of the IPND Code, which require a Data Provider to download the information the IPND Manager produces about hard and soft errors⁸, and take reasonable steps to resolve the matter and supply the corrected public number customer data to the IPND Manager within one business day for hard errors and two business days for soft errors.
 - > additionally, the IPND Manager sends reminders via email (at least twice a year) to the approved contact(s) of all Data Providers about the importance of checking the corresponding error file after each IPND upload to ensure the file has been processed successfully.
 - > by reference to clause 6.1.10 of the IPND Code, which encourages Data Providers to check a monthly Changed Data Provider report produced by the IPND Manager, which informs the Data Provider of all numbers gained and lost in the last month.

⁸ 'Hard' and 'soft' errors are identified during the IPND's validation process when a Data Provider attempts to upload a file of IPND records (a file may contain one or more records). A hard error, such as mandatory field in the IPND record being blank, prevents the upload of the file and/or the record containing the hard error to the IPND. A soft error is a possible error in an individual field of a record. In this case, the file is still uploaded to the IPND but is tagged as having a 'soft' error. A soft error can signify potential name and/or address inaccuracies, or missing information within an IPND record. The IPND Manager makes reports about hard and soft errors available to Data Providers.

Telstra's response to the Notice

12. Telstra's response stated that it had compared its seven customer databases with the IPND data on three different dates between 26 July 2018 and 6 August 2018, which revealed that:
 - a. **965,522** public numbers associated with a Telstra 'active' service did not have a corresponding record in the IPND;
 - b. **4,561,541** IPND records for public numbers associated with a Telstra service had incorrect data, made up of:
 - i. 1,212,164 public numbers associated with Telstra 'active' services which had a 'disconnected' status in the corresponding IPND record;
 - ii. 54,865 records associated with Telstra which had a 'connected' status in the IPND but which were shown as 'disconnected' in Telstra's customer database; and
 - iii. 3,294,512 records associated with Telstra which had a 'connected' status in the IPND but which were not present in Telstra's customer database.
13. The figures in paragraph 12 are the combined results from all Telstra's customer systems.
14. Telstra also stated that:
 - a. Telstra had a number of practical and logistical challenges in completing the extraction and comparison of the data.
 - b. Telstra took measures to ensure the IPND data sets were as comparable as possible, however comparison of data from multiple systems across different extraction windows was complex.
 - c. In the case of some of the older legacy systems, Telstra advised it may be difficult to find the programming expertise to build the required functionality for comparison of data.
 - d. Some of the anomalies in the comparative numbers were more likely to reflect problems Telstra encountered in extracting the comparison data, rather than an underlying misalignment in the customer records in the IPND and Telstra's customer systems.
 - e. As legacy services are withdrawn and customers are migrated to the NBN, customers can appear in more than one Telstra system, at any given point in time. With the scale of the NBN migration, Telstra estimated up to 14 million records could be partially or wholly present in more than one of the Telstra systems being compared to the IPND.
 - f. Telstra believed it could continue to improve the robustness of the data comparison. Telstra would continue its analysis of a number of issues to more precisely quantify the extent, and the root causes, of any potential misalignment with the IPND. Telstra noted that in some instances where there appeared to be more records in Telstra systems than in the IPND, the size of the misalignment was likely to be overstated.

- g. Telstra acknowledged there should be, and it was committed to ensuring, closer alignment between the IPND and Telstra's customer systems.
- h. Telstra had taken measures, and would take further measures, to address the root causes it had been able to identify in any potential residual misalignment between the IPND and Telstra's customer systems. Telstra would report back to the ACMA on the outcomes of its further investigations.

Telstra's response Preliminary Findings (including an update on remediation activities)

15. The ACMA's preliminary findings set out that Telstra had contravened the service provider rule and the IPND Code in relation to:
 - a. **967,717** active services with no record in the IPND. This figure comprised the 965,522 numbers reported by Telstra in response to the Notice, plus 2,195 numbers confirmed by Telstra as missing records prior to the commencement of the investigation; and
 - b. **4,561,541** IPND records for Telstra services with an incorrect Service Status Code (being the total of the figures provided by Telstra in response to the Notice).
16. In its response, Telstra submitted that:
 - a. It reaffirmed its commitment to ensuring public number customer data it sends to the IPND Manager is current, accurate and up-to-date.
 - b. It claimed its further investigations had revealed there were substantially fewer missing and inaccurate IPND records than it reported in response to the Notice and were included in the ACMA's preliminary findings, but that even with adjusted figures, the 'apparent misalignment is still a significant issue'.
 - c. It reiterated its concerns about potential analytical risks comparing point in time IPND and CSP database extracts, stating 'it is inevitable that at any point in time a snapshot analysis will struggle to adjust for the level of dynamic change in the IPND and CSP databases being compared'. For example, a customer migrating from a fixed-line copper network to the NBN may have a 'disconnected' record for the former service in one customer database and a 'connected' record in another.
 - d. Certain misalignments were also a result of the way the IPND interacts with some of Telstra's legacy systems and it continues to address these through workarounds.
 - e. Telstra uses the process in clause 4.2.28 of the IPND Code to obtain extracts of subsets of its connected records from the IPND Manager for all systems on a regular basis. Telstra uses these extracts to identify data quality issues (such as inaccuracies in name and address) but has not in the past used them to identify potential misalignments between the IPND and Telstra's customer systems.
 - f. Telstra complies with the processes set out in clauses 6.1.6 and 6.1.7 of the IPND Code in respect of downloading 'hard error' and 'soft error' files and rectifies any errors that are identified by these reports. The majority of misalignments identified through this reconciliation process would not have been apparent from these reports.
 - g. Up until 2010, Telstra received and acted upon Changed Data Provider Reports provided by the IPND Manager in accordance with clause 6.1.10 of the IPND Code.

In March 2011, the IPND Manager advised Telstra that it was ceasing to supply these reports in the then-current format. Telstra took this to mean that this information would no longer be available and decommissioned its business as usual processing of the reports. However, as part of this investigation, Telstra became aware that the raw data which was included in the discontinued Changed Data Provider Reports is still being produced by the IPND Manager and is available to Telstra. Telstra is in the process of incorporating this back into its data quality assessments.

17. From the information provided in Telstra's response to the Preliminary Findings and further analysis by the ACMA, the number of Telstra services with missing records was reduced to **718,354** (from 967,717). The number of Telstra services with inaccurate records was reduced to **249,829** (from 4,561,541).
18. Detail about why the numbers of contraventions have been reduced is provided at Annex 1.

Findings and reasons

Compliance with the Act

19. Subsection 101(1) of the Act requires that service providers, including CSPs, comply with the service provider rules that apply to them. Subsection 98(1) of the Act provides that the service provider rules include those set out in Schedule 2 to the Act.
20. Clause 1 of Schedule 2 to the Act provides that service providers must comply with the Act. Clause 10 of Schedule 2 requires that where a CSP supplies a carriage service to an end-user, and the end-user has a public number, the CSP must give the IPND Manager such information as it reasonably requires to fulfil its obligation to provide and maintain an IPND.

Clause 10 of Schedule 2

21. In determining what information the IPND Manager reasonably requires to fulfil its obligation to provide and maintain an IPND, the ACMA has regard to the Act, the Telstra Licence Conditions, the IPND Code and the Technical Requirements.
22. Subclause 10(4) of the Telstra Licence Conditions requires that the IPND must include, among other things, the public number, and the name and address of the customer. It is reasonable for the IPND Manager to require that information which the Telstra Licence Conditions require it to obtain, and which are essential to the maintenance of the IPND.
23. Further, the IPND Manager may reasonably require other information that will assist in delivering the objectives of the IPND. Having regard to the critical functions described in paragraph 10 above, the ACMA considers that the service status of a number (that is, 'connected' or 'disconnected') is important to the proper functioning of the IPND, given that an incorrect status could adversely impact Data Users' services (noting that researchers and public number directory publishers only receive 'connected' records). It could also cause severe detriment in some cases (if, for example, a service did not receive an emergency warning because it was listed as 'disconnected').
24. The IPND Manager has explicitly sought the service status information from Data Providers in respect of each IPND entry, via the Technical Requirements. As noted above, the Service Status Code is a mandatory IPND field (others are optional), and the Technical Requirements have been made in consultation with, and with the agreement

of, Data Providers. Further, clause 4.2.10 of the IPND Code provides that Data Providers must ensure that all public number customer data transferred to the IPND Manager is in the format specified in the Technical Requirements; and clause 4.2.11 provides that the Data Provider must ensure that the information provided to the IPND Manager is accurate, complete, and up-to-date.

25. Considering the above, the ACMA is satisfied that the IPND Manager reasonably requires CSPs to provide correct information about whether a telephone number is connected or disconnected to fulfil its obligations as IPND Manager. By uploading information that incorrectly identified connected telephone numbers as 'disconnected', and disconnected telephone numbers as 'connected', Telstra did not give the IPND Manager the information it reasonably required to fulfil its obligation to maintain the IPND.
26. Based on information provided by Telstra, it did not upload public number customer data to the IPND for 718,354 public numbers and its IPND customer data for 249,829 public numbers had, at a minimum, an incorrect connection status⁹.
27. Telstra has advised that the errors have occurred due to a range of technical and/or systems issues. This does not excuse or detract from Telstra's responsibility to ensure that it gives the IPND Manager the information it reasonably required to fulfil its obligation to maintain the IPND.
28. The ACMA therefore finds that Telstra contravened clause 10 of Schedule 2 to the Act.
29. Accordingly, the ACMA finds that Telstra contravened subsection 101(1) of the Act as it failed to comply with the service provider rule in clause 10 of Schedule 2 to the Act.

Compliance with the IPND Code

30. The IPND Code is an industry code registered under Part 6 of the Act¹⁰ which applies to CSPs (among others).¹¹

Clause 4.2.1

31. Section 4.2 of the IPND Code sets out rules in relation to the provision of data to the IPND Manager. As noted above, clause 4.2.1 of the IPND Code obliges a CSP to supply relevant public number customer data (also referred to as PNCD) to the IPND Manager for each public number it uses to supply a carriage service. Telstra is a CSP within the meaning of the IPND Code.
32. Public number customer data includes, among other things, the public number, and the name and address of the customer, as referenced in the Telstra Licence Conditions and the definition in clause 2.2 of the IPND Code.
33. Based on information provided by Telstra, and for the reasons set out at Annexe 1, Telstra did not upload public number customer data to the IPND for 718,354 public numbers associated with active, or previously active, Telstra services.
34. The ACMA therefore finds that Telstra contravened clause 4.2.1 of the IPND Code.

Clause 4.2.11

⁹ This investigation has not considered whether other fields in the relevant IPND records contain inaccuracies.

¹⁰ The IPND Code is registered under section 117 of the Act.

¹¹ See cl. 1.3.1(b) of the IPND Code.

35. Clause 4.2.11 of the IPND Code requires a CSP to ensure that the public number customer data provided to the IPND Manager is accurate, complete and up to date.
36. Based on information provided by Telstra, and for the reasons set out at Annexe 1, Telstra did not upload customer data to the IPND for 718,354 public numbers, and IPND records for 249,829 public numbers had an incorrect Service Status Code.
37. The ACMA therefore finds that Telstra contravened clause 4.2.11 of the IPND Code as it failed to ensure that the information it provided to the IPND Manager in those instances was accurate, complete and up-to-date.

Clause 4.2.25

38. Clause 4.2.25 of the IPND Code requires a CSP to supply to the IPND Manager all public number customer data updates that occur on one business day, by the end of the next business day.
39. Public number customer data updates can include a change to the customer data for an existing number, or any new or ported numbers for which customer data has not previously been provided by the CSP.
40. Based on information provided by Telstra, it did not upload public number customer data for 718,354 public numbers to the IPND and there was incorrect information in the IPND for a further 249,829 public numbers. Telstra made no claim that these numbers were for services that were newly connected, ported or disconnected and that the time limit for uploading or updating IPND customer data had not expired. Consequently, updates for these services were not supplied to the IPND within the requisite timeframe.
41. The ACMA therefore finds that Telstra contravened clause 4.2.25 of the IPND Code by failing to supply public number customer data updates that occurred on one business day, by the end of the next business day.

Annexe 1

Table 1 – Telstra submissions regarding contravention totals, ACMA response, and contravention totals

		Total from response to Notice	Revised total from response to Prelim Finding	Telstra's: - reason for misalignment - revision of total (if applicable) - remediation update	ACMA response to revised figure	ACMA finding totals
System 1	Services with missing IPND records	582,587	0	Telstra states these are in-dial extension numbers. It argues that these services do not require PNCD to be uploaded to the IPND, citing the note at clause 4.2.1 of the IPND which states <i>Where number only services are used that only permit indial calling, such as 1800, 13/1300 or equivalent numbers, Data Providers may exclude the PNCD for these services from the IPND.</i>	The ACMA considers it is arguable that some of these services are subject to the service provider rule at clause 10(2) of Part 4 of Schedule 2 to Act, and the requirements of clause 4.2.1 of the IPND Code. Further, the note referenced by Telstra is a guide to interpretation only and not binding as a Code rule (clause 1.17 of the IPND Code). However, the note gives rise to an ambiguity and on this occasion, the ACMA has excluded these services from its contravention totals.	0
System 1	Active services with IPND records with a disconnected status	0	0	No revision of total from response to Notice to response to Preliminary Findings.	Not applicable.	0
	Disconnected services with IPND records with a connected status	51,967	0	For the combined figure for these categories (133,943), Telstra states it identified 42,608 results which fell outside the extract window and were incorrectly included in the response to the Notice for these categories. The remaining 91,335 are not misalignments because: - 6,120 services have been ported to other carriers but were initially counted as potential misalignments due to timing differences between the IPND and AXIS extracts. - 85,215 services have transitioned, or are transitioning, to the NBN and therefore appear as 'disconnected' in one customer system and connected in another.	The ACMA accepts Telstra's explanations as plausible and has excluded these services from the contravention totals.	0
	Services missing from Telstra's system but connected in the IPND	81,976	0			
System 2	Services with missing IPND records	160,239	160,239	Telstra states these misalignments were due to a defect in the daily batch upload of system records from this system to the IPND. Telstra has not argued these services should be excluded from the contraventions. A permanent fix for the system error was implemented on 24 August 2018. The records were sent to the IPND on 16 October 2018 (the delay was due to the need to manage large data uploads to the IPND). No revision of total from response to Notice to response to Preliminary Findings.	Not applicable.	160,239
	Active services with IPND records with a disconnected status	39,530	39,530	Telstra states that disconnection notifications for these services were not sent to the IPND because a defect affected 'order churning' from Telstra retail to wholesale and some other technical system issues.	Not applicable.	39,530

Annexe 1

		Total from response to Notice	Revised total from response to Prelim Finding	Telstra's: - reason for misalignment - revision of total (if applicable) - remediation update	ACMA response to revised figure	ACMA finding totals
	Disconnected services with IPND records with a connected status	111,243	111,243	The churn defect was remediated on 24 August 2018. All records were sent to the IPND on 16 October 2018. No revision of total.		111,243
	Services missing from Telstra's system but connected in the IPND					
System 3	Services with missing IPND records	5,257	0	Regarding 3,244 of these services, Telstra states this system is a highly automated system which does not hold postcode data. Subsequently records from this system generate a large amount of 'soft' and some 'hard' errors. It is refreshed each quarter to add postcode data. Telstra states these misalignments would have been identified as part of quarterly system refresh process and should be excluded from the contraventions totals. 2,013 records were overwritten by other CSPs. Telstra identified the issue by referring to the monthly Changed Data Provider reports issued by the IPND Manager. Telstra states these records (5,257 in total) will be sent to the IPND on 11 January 2019.	Telstra's explanation of the system refresh does not explain why public number customer data would be missing for these numbers. Telstra is not claiming that the absence of postcode information prevents data being uploaded to the IPND. It does state that some data generated a hard error, but this must be for reasons other than the absence of postcode data given that not ALL records in this category did so. Therefore, records in this category should exist (regardless of the presence or accuracy of postcode information). Accordingly, the ACMA has included these 3,244 services in its contraventions total. If another CSP has 'overwritten' Telstra's IPND records, these records would appear in Telstra's customer systems but not in an extract of Telstra's IPND records, because they would be attributed in the IPND to the CSP which 'overwrote' record. The ACMA has accordingly excluded 2,013 records from the contraventions total.	3,244
	Active services with IPND records with a disconnected status	1,023	0	Telstra claims, as above, that the incorrect Service Status Code on the numbers identified for these inaccurate records would have been identified as part of the quarterly system refresh and should be excluded from the contraventions totals.	Telstra's explanation of the system refresh does not explain why the Service Status Code for these numbers would be incorrect. Telstra is not claiming that the absence of postcode information prevents data being uploaded to the IPND, or that the absence of postcode information has any effect on the Service Status Code. Therefore, records in this category should exist and have a correct Service Status Code (regardless of the presence or accuracy of postcode information). Accordingly, the ACMA has included these services in its contraventions total.	1,023
	Disconnected services with IPND records with a connected status	2,733	0			2,733

Annexe 1

		Total from response to Notice	Revised total from response to Prelim Finding	Telstra's: - reason for misalignment - revision of total (if applicable) - remediation update	ACMA response to revised figure	ACMA finding totals
	Services missing from Telstra's system but connected in the IPND	12,077	0	<p>Telstra states these records represent historical services (primarily from the 1990s) that have been disconnected. Although a disconnection update to the IPND record was previously sent, it resulted in a 'hard error', but Telstra was unable to resend the file to correct the hard error because the Telstra systems and the information flow to the IPND is highly automated. Once a service has been disconnected in Telstra's systems, it cannot raise a fresh disconnection order, and therefore the IPND record is not updated.</p> <p>Historically, the IPND Manager has not been able to rectify these misalignments as it did not have the ability to manually amend records. A manual change process (for which Telstra long advocated) was included in the 2017 revision of the IPND Code (clause 6.1.12). Such records can now be manually corrected by the IPND Manager and these records have now been sent to the IPND Manager to action.</p> <p>Telstra believes the ACMA was aware of the problem to which this Code amendment was directed. Accordingly, Telstra believes it is inappropriate for the ACMA now to identify these misalignments as breaches of Telstra's IPND obligations.</p>	<p>While it does not excuse or detract from Telstra's compliance responsibility, the ACMA accepts that historically, records that have been disconnected in Telstra's automated systems have been hard to correct in the IPND if the initial upload file had 'hard errors'.</p> <p>However, as Telstra itself states, it advocated for some time for the IPND Code amendment which was enacted in November 2017, to allow the IPND Manager to manually correct such errors. Clause 6.1.12 states:</p> <p><i>The IPND Manager may perform limited maintenance of a complete PNCD or PNDD record in the IPND where:</i></p> <p><i>(a) Numbers that may no longer be in use by any CSP and requires the Service Status Code to be changed to Disconnected; or</i></p> <p><i>(b) where numbers do not comply with the Plan.</i></p> <p>Telstra had had approximately 7 months to work with the IPND Manager to correct these records prior to the commencement of this investigation. Accordingly, the ACMA has included these services in its contraventions total.</p>	12,077
System 4	Services with missing IPND records	172,400	554,700	<p>As flagged in Telstra's response to the Notice, Telstra anticipated that the discrepancies in this system's results may be due to the difficulties of reconciling the records of multi-line customers which record individual numbers for services which are 'grouped' under the same customer or are part of the same service. Telstra committed to a more thorough investigation of these discrepancies, which resulted in the revised figures.</p> <p>Telstra has identified:</p> <ul style="list-style-type: none"> - 26,900 records were incorrectly overwritten by other CSPs. Telstra identified these records by referring to the Changed Data Provider Reports and argues they should be excluded from the contraventions totals. - 554,700 update records had not been sent to the IPND due to a technical issue. Telstra has not argued these services should be excluded from the contraventions. 	<p>For the reasons set out for other systems, the ACMA has excluded 26,900 records overwritten by other CSPs from the contraventions total.</p> <p>The ACMA has included 554,700 in its contraventions totals.</p>	554,700
	Active services with IPND records with a disconnected status	1,171,610	8,300	<p>These records had not been sent to the IPND due to a technical issue. Telstra has not argued these services should be excluded from the contraventions.</p>	<p>The ACMA has included 8,300 services in its contraventions totals.</p>	8,300

Annexe 1

		Total from response to Notice	Revised total from response to Prelim Finding	Telstra's: - reason for misalignment - revision of total (if applicable) - remediation update	ACMA response to revised figure	ACMA finding totals
	Disconnected services with IPND records with a connected status	47,037	55,000	Telstra has identified: - 1,100 records were incorrectly overwritten by other CSPs. - 53,900 records had not been sent to the IPND due to a technical system issue.	For the reasons set out for other systems, the ACMA has excluded 1,110 records overwritten by other CSPs from the contraventions total. The ACMA has included 53,900 in its contraventions totals.	53,900
	Services missing from Telstra's system but connected in the IPND					
System 5	Services with missing IPND records	0	0	No revision of total.	Not applicable.	0
	Active services with IPND records with a disconnected status	0	0	No revision of total.	Not applicable.	0
	Disconnected services with IPND records with a connected status	1,382,064	20,857	After further investigation, Telstra identified that some customer access technology types were not being included in the data extract process for the comparison set out in its response to the Notice. Consequently, a new data set was extracted from this system and the data reconciliation was re-run which resulted in a significant proportion inaccurate records being identified as in fact being accurate. Telstra states these records are still being analysed to determine whether the original identification of these as inaccurate is due to a misalignment or due to the extract from this system still excluding some technology types.	The ACMA has included 20,857 services in its contraventions totals.	20,857
	Services missing from Telstra's system but connected in the IPND					
System 6	Services with missing IPND records	44,868	0	The analysis for this system undertaken for Telstra's Response to the Notice was incorrect because the wrong data was used due to a technical issue with the data extract upload. This issue was identified following further investigation of the apparent misalignments and a reconciliation conducted against the complete and correct data set has resulted in thee records for these services being identified as not missing.	The ACMA accepts Telstra's explanations as plausible and has excluded these services from the contravention totals.	0
	Active services with IPND records with a disconnected status	0	0	No revision of total from response to Notice to response to Preliminary Findings.	Not applicable.	0

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		Total from response to Notice	Revised total from response to Prelim Finding	Telstra's: - reason for misalignment - revision of total (if applicable) - remediation update	ACMA response to revised figure	ACMA finding totals
	Disconnected services with IPND records with a connected status	0	0	No revision of total from response to Notice to response to Preliminary Findings.	Not applicable.	0
	Services missing from Telstra's system but connected in the IPND	1,660,115	400	Telstra has identified due to a file sequencing issue 400 disconnection records were not sent to the IPND on the day of the data extract. These records would have been picked up by the system's management processes and updated during the following days, and additional remediation measures are not required.	The ACMA accepts Telstra's explanations as plausible and has excluded these services from the contravention totals.	0
System 7		171	171	Telstra has identified 171 records were not in the IPND. These records were sent to the IPND on 31 August 2018.	Not applicable.	171
		1	1	Telstra has identified 1 record was not in the IPND. This record was sent to the IPND on 31 August 2018.	Not applicable.	1
		165	165	165 disconnection records for secondary numbers were not in the IPND due to a system issue. 131 records were sent to the IPND on 31 August 2018. Telstra needs to undertake a manual fix to rectify the remaining 34 records and anticipates this will be completed by 31 March 2019.	Not applicable.	165
		0	0	Not applicable.	Not applicable.	0
Total missing records*						718,354
Total inaccurate records						249,829

*Note: Annexe 1 does not include 2,195 missing records that are considered contraventions but were identified through activities before the formal commencement of this investigation in July 2018.