Exemplar Aggregated Data

Overview

The following provides general non-binding guidelines regarding how to aggregate NORS and DIRS data, followed by examples of aggregated NORS and DIRS data based on hypothetical information. The aggregated data presented does not reflect the exact number of users affected by a service provider's outage and is only used for situational awareness. We remind agencies participating in our framework that failure to properly aggregate data in accordance with the rules adopted in the *Second Order* could lead to the improper disclosure of service providers' confidential information and may result in termination of their access to NORS and DIRS filings by the Commission. Participating agencies with additional questions are urged to contact the Commission for guidance.

General Aggregation Guidelines

Aggregation 'Dos'

- It is best to aggregate only NORS and DIRS information of the same type (e.g., aggregate wireless data and wireline data separately). If information is aggregated across different types, the public release of this information should state the types of NORS or DIRS information aggregated (e.g. "This data includes wireless and wireline data").
- It is best to aggregate 911 outages according to their impact (e.g., 911 call delivery affected, only 911-caller location information affected). If information is aggregated across different types of 911 outages, the public release of this information should note the approximate proportion of the effects (e.g., "in most cases only location information is affected").
- If aggregating NORS information, aggregate information related to long-term trends using final reports only.
- If aggregating NORS information from notifications or initial reports, please be aware that this information may change as service providers further remediate or investigate the outage. It is recommended that agencies make clear that this information is only preliminary and may change or be updated over time.
- If several reported outages seem very large, it is good practice to confirm the magnitude of the outage with the reporting service providers prior to releasing any aggregated information about them. In some instances, service providers may intentionally overestimate the effect of an outage out of an abundance of caution. Agencies should be aware of these circumstances prior to determining what information would be appropriate to release to the public.
- If an agency intends to aggregate the duration or the number of users affected by multiple outages, reporting the median is generally preferred over reporting the mean (average) because the mean may be skewed by unrepresentatively high or low outliers.
- When aggregating data for incidents occurring over a period of time, use the incident date/time, not the creation date or reportable date.
- The frequency of NORS outage reports varies by season. If aggregating for the purpose of comparing two time periods, it is advisable that the time periods be of the same season of the year (e.g., compare January to March 2020, to January to March 2019, but not to July to August 2019.)
- Be careful when aggregating outages with durations of all 9's that are greater than 99 (e.g., 999, 9999, 99999). These values can be indicators that the outage is ongoing even though the report is final. If in doubt, it is best to contact the reporting service provider and/or exclude these outages from the aggregation.

- Sudden increases or decreases in NORS reports may be the result of reporting rules changes or other effects. If sudden changes are noticed, the FCC should be consulted before data is made public. As a corollary, personnel responsible for data aggregation should keep up with any NORS rule changes.

Aggregation 'Don'ts'

- Do not release NORS data for a single outage, even if the name of the service provider is not mentioned in the release. Aggregation should always occur across at least four service providers, meaning that in most instances, agencies cannot release aggregated information about an ongoing outage.
- Do not aggregate data over a geographic region which has fewer than four service providers of that type in the region. For example, if a county is served by only three wireless service providers, do not report an aggregation of wireless outage data for that county.
- Do not aggregate NORS and DIRS data together.
- Do not aggregate NORS data at a scope smaller than a state, unless the reports you are aggregating all specify a smaller region (e.g., a specific county or Tribal territory).
- In NORS, do not aggregate non-service affecting outages (i.e., OC3 Simplex outages) with service affecting outages.
- Do not identify names of service providers as sources of outage data.
- Do not use the time zone data in NORS to determine outage location. This data is used only to identify the time zone for the incident time.
- Do not include Special Facilities outage reports in any aggregation.

Examples of Aggregated NORS and DIRS Data

NORS Example:

The following table shows the total number of wireline users affected by wireline outages in each state as reported by 4 companies or more:

Outage ID	Company	Reason Reportable	State Affected	Incident Date/Time	Duration Hours	Duration Minutes	Wireline Users Affected
ON-XXXX3471	Company 1	Wireline - 900,000 user-minutes	OHIO	1/4/2018 20:36	10	39	2,450
ON-XXXX3475	Company 4	Wireline - 900,000 user-minutes	OHIO	1/5/2018 20:36	4	35	43,540
ON-XXXX3477	Company 3	Wireline - 900,000 user-minutes	OHIO	1/6/2018 20:36	6	53	35,000
ON-XXXX3575	Company 4	Wireline - 900,000 user-minutes	OHIO	1/7/2018 20:36	0	30	40,313
ON-XXXX3580	Company 3	Wireline - 900,000 user-minutes	OHIO	1/8/2018 20:36	3	11	257,690
ON-XXXX3581	Company 2	Wireline - 900,000 user-minutes	OHIO	1/9/2018 20:36	5	28	23,434
ON-XXXX3582	Company 3	Wireline - 900,000 user-minutes	OHIO	1/10/2018 20:36	14	6	22,720
ON-XXXX3590	Company 3	Wireline - 900,000 user-minutes	OHIO	1/11/2018 20:36	10	7	10,897
ON-XXXX3591	Company 5	Wireline - 900,000 user-minutes	OHIO	1/12/2018 20:36	8	16	42,480
ON-XXXX3592	Company 3	Wireline - 900,000 user-minutes	OHIO	1/13/2018 20:36	3	11	257,690
ON-XXXX3593	Company 2	Wireline - 900,000 user-minutes	OHIO	1/14/2018 20:36	5	28	23434
ON-XXXX3598	Company 2	Wireline - 900,000 user-minutes	OHIO	1/15/2018 20:36	14	6	22,720
ON-XXXX3472	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/4/2018 20:36	10	7	10,897
ON-XXXX3474	Company 2	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/5/2018 20:36	8	16	42480
ON-XXXX3479	Company 4	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/6/2018 20:36	2	6	116000
ON-XXXX3481	Company 3	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/7/2018 20:36	26	6	1,624
ON-XXXX3560	Company 3	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/8/2018 20:36	21	35	234235
ON-XXXX3578	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/9/2018 20:36	6	21	59,647
ON-XXXX3579	Company 2	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/10/2018 20:36	11	27	8,860
ON-XXXX3595	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/11/2018 20:36	10	39	2450
ON-XXXX3599	Company 3	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/12/2018 20:36	4	35	43,540
ON-XXXX3600	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/13/2018 20:36	6	53	35,000
ON-XXXX3601	Company 5	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/14/2018 20:36	0	30	40313
ON-XXXX3602	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/15/2018 20:36	3	11	257690
ON-XXXX3603	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/16/2018 20:36	5	28	23434
ON-XXXX3604	Company 1	Wireline - 900,000 user-minutes	PENNSYLVANIA	1/17/2018 20:36	14	6	22720
ON-XXXX3476	Company 1	Wireline - 900,000 user-minutes	VIRGINIA	1/5/2018 20:36	10	7	10,897
ON-XXXX3480	Company 2	Wireline - 900,000 user-minutes	VIRGINIA	1/6/2018 20:36	8	16	42480
ON-XXXX3482	Company 3	Wireline - 900,000 user-minutes	VIRGINIA	1/7/2018 20:36	2	6	116,000
ON-XXXX3485	Company 1	Wireline - 900,000 user-minutes	VIRGINIA	1/8/2018 20:36	26	6	1,624
ON-XXXX3487	Company 1	Wireline - 900,000 user-minutes	VIRGINIA	1/9/2018 20:36	3	11	257690
ON-XXXX3490	Company 4	Wireline - 900,000 user-minutes	VIRGINIA	1/10/2018 20:36	5	28	23434
ON-XXXX3502	Company 1	Wireline - 900,000 user-minutes	VIRGINIA	1/11/2018 20:36	14	6	22,720
ON-XXXX3507	Company 3	Wireline - 900,000 user-minutes	VIRGINIA	1/12/2018 20:36	10	7	10,897
ON-XXXX3517	Company 2	Wireline - 900,000 user-minutes	VIRGINIA	1/13/2018 20:36	8	16	42,480
ON-XXXX3530	Company 1	Wireline - 900,000 user-minutes	VIRGINIA	1/14/2018 20:36	2	6	116000
ON-XXXX3531	Company 1	Wireline - 900,000 user-minutes	VIRGINIA	1/15/2018 20:36	26	6	1624

For the NORS aggregation example table below, the number of wireline users affected from all reports above per state were added and are presented in the total number of wireline users affected per state:

State Affected	Wireline Users Affected
OHIO	782,368
PENNSYLVANIA	898,890
VIRGINIA	645,846

DIRS Example:

The following table shows the total number of cell sites were affected by a disaster in each state as reported by 4 companies or more:

ID Number	Company	County	Percent of Historical Capacity Available	Cell Sites Served	Cell Sites Affected (Down)	Cell Sites Out Due to Cell Site Damage	Cell Sites Out Due to Transport	Cell Sites Out Due to No Power at Cell	Cell Sites on Back-Up Power	State	Updated
0XX-XXXXXXXX X1561	Company 1	County	99	164	1	0	1	0	0	CALIFORNIA	19:19.0
0XX-XXXXXXXX X1562	Company 2	County	100	26	0	0	0	0	0	CALIFORNIA	19:19.0
0XX-XXXXXXXX X1563	Company 3	County	99.82	1623	3	0	0	0	0	CALIFORNIA	03:53.0
0XX-XXXXXXXX X1564	Company 4	County	100	2238	4	3	1	0	0	CALIFORNIA	24:21.0
0XX-XXXXXXXX X1565	Company 1	County	100	8	0	0	0	0	0	FLORIDA	19:19.0
0XX-XXXXXXXX X1566	Company 2	County	100	23	0	0	0	0	0	FLORIDA	19:19.0
0XX-XXXXXXXX X1567	Company 3	County	100	203	0	0	0	0	0	FLORIDA	19:19.0
0XX-XXXXXXXX X1568	Company 4	County		9	3	0	1	2	0	FLORIDA	56:04.0
0XX-XXXXXXXX X1569	Company 5	County		14	5	0	2	3	0	FLORIDA	56:04.0
0XX-XXXXXXXX X1570	Company 1	County		148	26	0	10	16	0	FLORIDA	56:04.0
0XX-XXXXXXXX X1571	Company 2	County	100	50	0	0	0	0	0	FLORIDA	02:42.0
0XX-XXXXXXXX X1572	Company 3	County	100	9	0	0	0	0	0	GEORGIA	57:15.0
0XX-XXXXXXXX X1573	Company 4	County	100	2	0	0	0	0	0	GEORGIA	58:09.0
0XX-XXXXXXXX X1574	Company 5	County	100	24	0	0	0	0	0	GEORGIA	58:25.0
0XX-XXXXXXXX X1575	Company 3	County	100	33	0	0	0	0	0	GEORGIA	58:42.0
0XX-XXXXXXXX X1576	Company 4	County		95	13	0	0	13	0	GEORGIA	56:04.0
0XX-XXXXXXXX X1577	Company 2	County		233	0	0	0	0	0	GEORGIA	56:04.0
0XX-XXXXXXXX X1578	Company 1	County	100	285	0	0	0	0	1	GEORGIA	03:04.0
0XX-XXXXXXXX X1579	Company 1	County		33	11	0	4	7	0	PENNSYLVANIA	56:04.0
0XX-XXXXXXXX X1580	Company 2	County		126	0	0	0	0	0	PENNSYLVANIA	04:52.0
0XX-XXXXXXXX X1581	Company 3	County		126	0	0	0	0	0	PENNSYLVANIA	05:36.0
0XX-XXXXXXXX X1582	Company 4	County	100	28	0	0	0	0	0	PENNSYLVANIA	24:28.0
0XX-XXXXXXXX X1583	Company 5	County	100	13	0	0	0	0	0	PENNSYLVANIA	24:28.0
0XX-XXXXXXXX X1584	Company 3	County	100	16	0	0	0	0	0	PENNSYLVANIA	24:28.0
0XX-XXXXXXXX X1585	Company 1	County	100	46	0	0	0	0	0	PENNSYLVANIA	24:28.0
0XX-XXXXXXXX X1586	Company 2	County	100	1	0	0	0	0	0	PENNSYLVANIA	24:28.0
0XX-XXXXXXXX X1587	Company 3	County	100	37	0	0	0	0	0	PENNSYLVANIA	58:32.0

For the DIRS aggregation example table below, the number of cell sites affected from all wireless reports above for each state were added and presented in the total number of affected cell sites per state in the table below. The percentage of cell sites out of service were calculated by dividing the number of cell sites served by the number of cell sites out of service for each state:

State Affected	Sum of Cell Sites Served	Sum of Cell Sites Out of Service	Sum of Cell Sites Out Due to Cell Site Damage	Sum of Cell Sites Out Due to Transport	Sum of Cell Sites Out Due to No Power	Percent Cell Sites Out of Service
CALIFORNIA	4051	8	3	2	0	0.20%
FLORIDA	455	34	0	13	21	7.47%
GEORGIA	681	13	0	0	13	1.91%
PENNSYLVANIA	426	11	0	4	7	2.58%