Trace Tool

Network route analysis — from NE/FE links to the FON / Aggregation Hub

A user guide explaining what the Trace Tool does, how to use it, and how to read its results — with a complete worked example.

Input	Output	Privacy
One CSV file with 7 columns	Excel report (2 sheets) + KML map	Runs in your browser — no data leaves your device

1. What is the Trace Tool?

In a transmission network, every site is connected a **Near End (NE)** to a **Far End (FE)**. These links form chains that eventually arrive at a **FON / Aggregation Hub** — the collection point where traffic is aggregated (Fiber Aggregation).

The Trace Tool follows these NE/FE chains site by site, builds the full route from every site all the way to its FON, and flags any problems it finds along the way (loops, broken chains, duplicate links, sites passing through more than one FON/Aggregation HUB.

Why this matters: In a large MW plan with hundreds of sites, manually checking every route to make sure it reaches a FON and that it doesn't loop or pass through two or more hubs it is extremely time consuming and human error. The Trace Tool does it in seconds.

How a route reaches its FON / Aggregation Hub

2. CSV Format

The tool expects a CSV with **7 columns**. Column order matters; the first row should be the headers exactly as shown:

Column	Type	Example	Required	Notes
NE	Text	SITE_001	Yes	Near End site name
FE	Text	SITE_002	Yes	Far End site name (next site in chain)
FON	Text	FON_A	Yes	Site ID if this site IS a FON / Aggregation Hub. Leave blank otherwise.
NE Lat	Number	24.7136	Yes	Near End latitude (decimal)
NE Long	Number	46.6753	Yes	Near End longitude (decimal)
FE Lat	Number	24.7510	Yes	Far End latitude (decimal)
FE Long	Number	46.7010	Yes	Far End longitude (decimal)

> **Important rule about the FON column:** You don't need to repeat the FON ID on every row. Just enter it once, on the row where the site is the FON / Aggregation Hub. The tool walks the chain automatically and finds the FON for every site.

3. Worked Example

Suppose your network has 5 sites that ultimately connect to one FON hub named **FON_X**:

NE	FE	FON	NE Lat	NE Long	FE Lat	FE Long
SITE_A	SITE_B		24.7100	46.6700	24.7300	46.6850
SITE_B	SITE_C		24.7300	46.6850	24.7450	46.6950
SITE_C	FON_X		24.7450	46.6950	24.7600	46.7050
SITE_D	SITE_E		24.7800	46.7200	24.7950	46.7300
FON_X		**FON_X**	24.7600	46.7050		

Looking at this CSV, the tool follows the chains and produces:

SITE_A → **SITE_B** → **SITE_C** → **FON_X** — 3 hops, reaches FON_X.

SITE_B → **SITE_C** → **FON_X** — 2 hops, reaches FON_X.

SITE_C → **FON_X** — 1 hop, reaches FON_X.

SITE_D → **SITE_E** → **???** — **incomplete** (SITE_E has no further FE in the CSV).

4. What You Get Back

After the tool runs, you see a results page with the run summary, then you can download two files:

4.1 — Results page summary

Before downloading anything, you see counts at a glance: rows read, sites plotted, FON hubs found, and incomplete routes. You also get a list of any rows that had bad or missing coordinates (skipped), and any routes that didn't reach a FON.

Note: it recommended to correct the Errors for sites that have missing route, Multiple FE, .., etc and run the tool again to get clear google map

4.2 — Excel file (2 sheets)

Sheet 1: Trace Issues

One row per hop. The tool flags 5 issue types:

1. **Multiple FE** — one site appears with two different FE assignments
2. **FON-to-FON** — one hub points to another hub
3. **Passing Multiple FON** — route crosses more than one hub before terminating
4. **Loop** — chain returns to a previous site (never reaches a hub)
5. **Route Not Complete** — chain dies without arriving at a FON

Sheet 2: Route Summary

One row per site — ready to share with stakeholders. Columns include: **Site ID**, **FE**, **FON**, **Hops To FON** (counts number of HOPs to reach FON), **Carrying Sites Count** (count number of sites depend on this site), **Full Route** (sites ID until reach FON like `A > B > C > FON_X`), and **Passing Sites** (list of intermediate sites ID that passing this site).

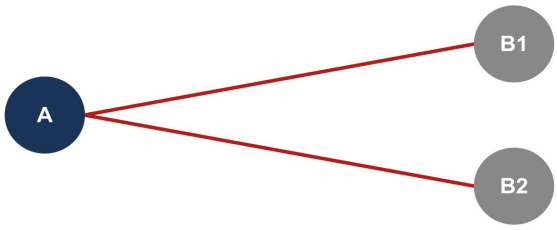
4.3 — KML map for Google Earth

Opens directly in Google Earth and shows:

- MW links drawn as colored lines.
- FON hubs marked with a red 'F' paddle icon.
- All sites sharing the same FON share a color — so you can see clusters at a glance.
- Incomplete routes (chains that never reached a FON) shown in **gray**.

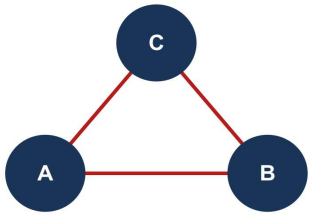
5. The 5 Issue Types — What They Look Like

These are the problems the Trace Tool detects automatically. Each issue appears in Sheet 1 of the Excel report with the exact site and link causing it.



MULTIPLE FE — one site, two targets

One site “A” appears with two different FE assignments “B1 & B2”, for example, SITE_A points to both SITE_B1 and SITE_B2. This usually means the source CSV has a planning conflict that needs resolving.



LOOP — never reaches a hub

The chain returns to a previous site (e.g. A → B → C → A) and never reaches a hub. The tool detects this and stops walking the chain to avoid an infinite loop.

ROUTE NOT COMPLETE — no FON reached

The chain ends without reaching a FON / Aggregation Hub. The last site in the chain has no further FE in the CSV. This often indicates missing rows in the input.

PASSING MULTIPLE FON — route crosses 2 hubs

A route crosses more than one hub before terminating (e.g. A → FON_1 → B → FON_2). Normally each chain should terminate at one FON/Aggregation HUB.

FON-to-FON — one hub points to another hub

The NE & FE both are FON/Aggregation HUB (e.g. FON_1's FE is FON_2). This usually means a data or information error mainly NE consider FON or the link is reversed. FON/Aggregation hub should be the termination point

6. How to Run the Tool

1. Open the tool

Go to traceroute.telecomblueprint.com — no login needed.

2. Upload your CSV

Click the upload area and select your prepared CSV (7 columns, comma-separated).

3. Review the results page

The tool processes the file in seconds, then shows you the summary. Check for skipped rows and incomplete routes.

4. Download the outputs

From the results page, download the Excel report and the KML map. Open them in Excel and Google Earth.

> **Tip:** If you find issues, fix them in your master CSV and re-run. The whole cycle upload, review, fix, re-upload and takes less than a minute.

Summary

The Trace Tool turns a long CSV of NE/FE links into a clean, validated network picture: every route mapped to its hub, every issue flagged, every site documented.

It saves hours of manual route-checking, prevents the kind of planning mistakes that are caught only in the field, and produces shareable Excel + KML outputs in seconds.

Try it now: `traceroute.telecomblueprint.com`
Other free tools: `telecomblueprint.com`
Contact: Essam Sulaiman — Nokia-NPO — Senior Transmission Planning