

GeoRoute

Map-based routing for postal operations

GeoRoute is a proven route management and optimization software, specifically designed to meet the diversified and often complex requirements of postal organizations. GeoRoute can be used to manage routes that visit most streets, as required for mail delivery, as well as point-to-point routes, as in the case of mailbox collection or extra pouch delivery.

GeoRoute is the routing software most widely used by postal administrations, with installations in Belgium, Canada, Germany, Ireland, Luxembourg, Norway, and United Kingdom.

This software features powerful optimization tools that minimize the number of routes required to service a given area. Route reductions typically reach 5% for mail delivery and 15% for other operations. Interactive map-based tools allow you to make any required change to the routes proposed by the software, or even create your own. You can then produce detailed maps and reports that accurately document each route.

Intended for organizations with multiple users and/or sites, GeoRoute also provides many tools to allow system administrators to customize the software for their users.

Designed for postal operations

Postal operations involve several types of collection and delivery, and thus several routing problems. Mail delivery is especially complex, often involving a combination of travel modes. Parcel delivery and courier service present a challenge because locations to service change everyday.

GeoRoute's ability to meet these requirements reflects GIRO's work with some of the world's larger postal administrations over the last 15 years. This has resulted in a complete and integrated set of tools meeting most route-related requirements.

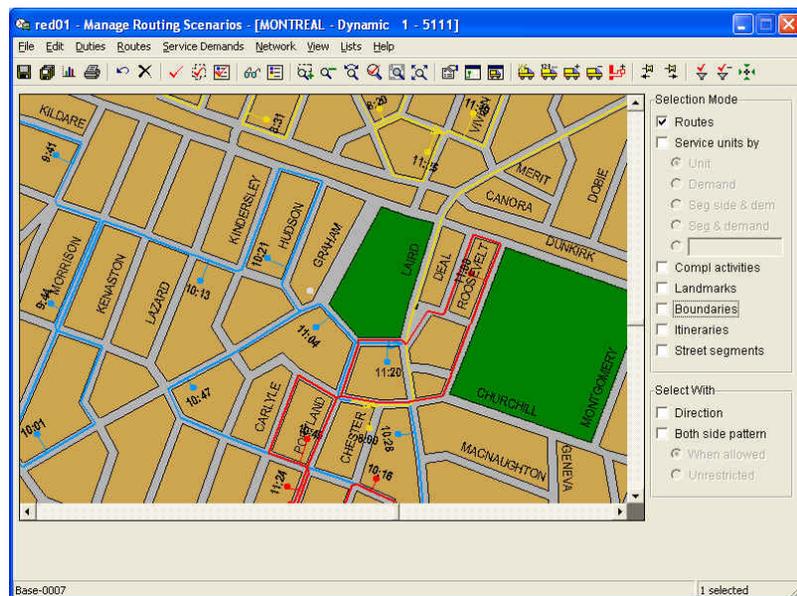
Mail delivery features

GeoRoute can address the following requirements, in many cases unique to mail delivery operations:

- Build routes using postal codes (such as ZIP+4) or any other form of street sections used for mail sorting, and which typically must be kept in the same route.
- Distinctly account for each side of the street, as they may be assigned to different routes.
- Allocate mail sorting time to each route based on their respective mail volume.
- Include required stops at extra pouch boxes.

- Zigzag narrow and/or lightly populated streets where allowed and if more efficient.
- Account for several possible transport modes and even a combination of modes to travel between the depot and route start/end points (ex.: public transit + walking to/from bus stop), or during delivery (ex.: park & loop routes). Appropriate parameters (ex.: speed, need to account for one-ways, etc.) are applied to each mode.

This results in a more accurate evaluation of the duration of each route. Based on this evaluation, GeoRoute's optimization tools design routes that include as much delivery time as possible, while respecting maximum workday duration. This normally translates into a reduced number of routes for a given area.



GeoRoute, routing software for postal operations.



The screenshot shows the 'red27 - Manage Routes' application window. It features a menu bar (File, Edit, View, Routes, Help) and a toolbar with various icons. The main area is divided into two panes. The top pane, titled 'Service route list', contains a table with columns: Route, Type, Prep., Travel, Service, DH Total, Waiting, Activity, Duration, Total, and Total Ct. The bottom pane, titled 'Activities by route', contains a table with columns: Pos., ID, Type, Duration, Qty 1, Qty 2, Qty 3, Arrival, Earliest, Latest, and Prio. The selected route in the top table is Pard-0006, and its corresponding activities are shown in the bottom table.

Route	Type	Prep.	Travel	Service	DH Total	Waiting	Activity	Duration	Total	Total Ct
Pard-0001	Parcel	0h30:00	0h31:26	5h52:09	0h36:16		0h30:00	7h59:51	33.845	296.
Pard-0002	Parcel	0h30:00	0h28:24	5h35:24	0h55:19		0h30:00	7h59:08	41.860	295.
Pard-0003	Parcel	0h30:00	0h31:33	5h43:58	0h43:44		0h30:00	7h59:15	37.642	296.
Pard-0004	Parcel	0h30:00	0h28:07	5h47:35	0h37:56		0h30:00	7h53:39	33.032	293.
Pard-0005	Parcel	0h30:00	0h23:42	5h42:17	0h40:00		0h30:00	7h45:59	31.853	289.
Pard-0006	Parcel	0h30:00	0h22:30	6h00:54	0h31:00		0h30:00	7h54:24	26.760	291.
Pard-0007	Parcel	0h30:00	0h20:47	6h12:36	0h22:16		0h30:00	7h55:40	21.530	291.
Pard-0008	Parcel	0h30:00	0h21:15	5h57:16	0h32:05		0h30:00	7h50:37	26.680	289.
Pard-0009	Parcel	0h30:00	0h22:08	5h50:08	0h44:39		0h30:00	7h56:55	33.387	292.
Pard-0010	Parcel	0h30:00	0h18:23	6h03:30	0h36:03		0h30:00	7h57:56	27.220	291.
Pard-0011	Parcel	0h30:00	0h20:01	6h00:32	0h32:09		0h30:00	7h52:43	26.103	290.
Pard-0012	Parcel	0h30:00	0h22:14	5h54:10	0h39:57		0h30:00	7h56:22	31.094	292.

Pos.	ID	Type	Duration	Qty 1	Qty 2	Qty 3	Arrival	Earliest	Latest	Prio.
1	C0323	Commerc	0h12:30	1	1		8:00	8:00	17:00	7
2	C0327	Commerc	0h15:37	1	2		8:12	8:00	17:00	9
3	C3197	Commerc	0h01:39	3	8		8:29	8:00	17:00	7
4	C3195	Commerc	0h01:52	3	6		8:32	8:00	10:00	1
5	C0329	Commerc	0h15:52	4	10		8:35	8:00	10:00	1
6	C3198	Commerc	0h15:29	1	1		8:51	8:00	12:00	4
7	C0328	Commerc	0h09:42	4	7		9:07	8:00	17:00	9
8	C0363	Commerc	0h14:23	4	7		9:18	8:00	17:00	7
9	C0360	Commerc	0h10:07	3	8		9:34	8:00	10:00	1
10	C0376	Commerc	0h02:44	1	2		9:46	8:00	12:00	4
11	C0365	Commerc	0h16:24	4	10		9:50	8:00	12:00	2
12	C0367	Commerc	0h07:28	4	8		10:07	8:00	17:00	8
13	C1228	Commerc	0h05:59	2	5		10:16	8:00	12:00	4

Route list with route details for selected route.

Motorized operation features

In addition to the above, *GeoRoute* provides many features for motorized operations such as parcel delivery, mailbox collection, and extra pouch delivery.

- Respect one ways and turn restrictions.
- Account for the access characteristics of each location (ex.: multiple access paths, must arrive on same side of the street, etc.).
- Respect strict or soft time windows for each location.
- Service time at each location estimated based on the different types of products to be delivered or collected.
- Respect vehicle capacities and other work rules.
- Account for multiple depots.

Route list with route details for selected route.

For those operations where locations to be serviced change on a daily basis, such as parcel delivery and courier services, *GeoRoute* can be used to plan base routes or territories, with daily optimization to account for exact locations to service.

Complementary tools

Your *GeoRoute* installation can be complemented by several optional modules. These include:

- GPS-based tools for field data collection. These can be used to:
 - Accurately identify all locations to service.
 - Measure the access and service time at each location.
 - Update your digital maps (ex.: missing street).
- Web-based client, allowing local staff to:
 - Update the base data as required (ex.: mail volumes).
 - Review and approve the optimized routes.
 - Print maps and reports.
- Route-to-depot assignment tool, to assist you with decisions such as:
 - From which depot should each route originate?
 - Where should you build a new depot?
 - Which depot should we close?

Other applications

While more specifically intended for postal operations, *GeoRoute*'s functionality is also well suited for other operations with special requirements, such as waste/recycling collection, meter reading and school transportation.



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