

HASTUS™

The complete solution for optimized transportation



GIRO's *HASTUS* software is an integrated solution that provides flexible modules for transportation planning, scheduling, operations, passenger information, and analysis.

HASTUS is designed for all modes of public transportation – from bus and BRT busway, to metro, heavy rail, and commuter rail. The software is well equipped for multimodal systems, as it facilitates service synchronization of both bus and rail and simplifies system administration through a common installation and transit database.

More than 250 companies worldwide use *HASTUS* to optimize all aspects of their transit operations. Unmatched flexibility, advanced algorithms, continuous product evolution, and exceptional training and support contribute to making *HASTUS* the industry benchmark for more than 30 years running.

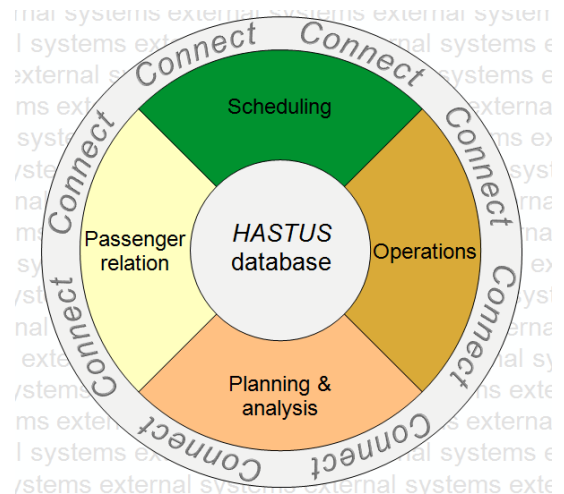
Benefits

- Improved efficiency and quality of service.
- Unprecedented optimization & cost savings.
- Streamlined decision-making processes.
- Minimized service disruptions & penalties.
- Seamless data exchange & file sharing.
- Exceptional user training and product support.
- Smooth transition from manual to automated processes.
- Equitable pricing based on size of operations.

Modular design

The *HASTUS* solution provides main modules for scheduling and daily operations, in addition to complementary modules for planning & analysis, and passenger information.

- **Scheduling modules:** Offer flexible tools that facilitate describing the route network and defining timetables. Powerful algorithms help create cost-saving vehicle and crew schedules, as well as multi-day rosters. Automatic solutions can be validated and fine-tuned using list-based and graphical views.
- **Operations modules:** Allow users to manage daily service changes using planned schedules, as well as vehicle and operator assignments. The garage graph in the *DailyVehicle* module lets users easily manage vehicle assignment and vehicle location in the depot, by row and position. Optimizers for crew and vehicle assignment ensure optimal use of resources at all times. Use of these modules leads to improved decision-making by ensuring complete and up-to-date information is available at all times. Users can compare actual versus planned schedules, monitor operator performance statistics, and export accurate timekeeping data for payroll. The Web-based *SelfService* module allows employees to access their personal information and perform various tasks such as entering overtime availability and preferences.
- **Planning & analysis modules:** Provide functions for network and timetable modeling, including synchronization while minimizing vehicle requirements. Run-time and ridership data analysis modules help improve fleet management and deployment in order to better tailor service to customer needs.
- **Passenger relations modules:** Ensure that relevant planned or real-time information is provided to customers. This includes trip-planning, route information, and stop-level information that is provided on the company Web site and in printed stop schedules, as well as through other sources such as IVR systems and digital signage. Passenger comments can also be recorded and immediately matched to the corresponding service information to ensure timely processing and response.



Industry-leading optimizers

GIRO remains the leader in delivering advanced optimization tools that help customers meet efficiency objectives throughout their planning and management processes. In repeated tests and implementations at client sites around the world, *HASTUS* scheduling algorithms generate savings of 2% to 5% over competing systems and manual methods. Recent important developments to incorporate optimization processes in *HASTUS* operations modules have resulted in *PlanOpt* to optimize crew assignment taking into account employee preferences and other management criteria, as well as *PlanBus* to optimize vehicles assignments that take into account maintenance, depot, and fleet constraints. These powerful algorithms use a flexible rules engine that produces excellent results in many diverse operating contexts.

Other *HASTUS* optimizers are available for rostering, run-time analysis, and trip planning. These provide GIRO clients with extended optimization coverage to help minimize costs and increase the quality of service provided to public transit users.

Continuous product evolution

GIRO allocates approximately 30% of its resources to R&D, enabling the company to release a new *HASTUS* version annually. The company also collaborates with research centers around the world (including Montréal's renowned Center for Research on Transportation) on optimization methods and system features. This not only ensures that new features or enhancements resulting from customer projects and GIRO's R&D efforts are incorporated into the software, but also that *HASTUS* solutions are compatible with the latest computing technologies.

Implementation & support

GIRO provides clients with a wide range of implementation services required to fully benefit from the software: specifications, configurations/adaptations, installation assistance, user training, online support, and more. The company's proven project management methodology ensures a smooth implementation within agreed timeframes, while quality, post-installation support is available on an ongoing basis via E-mail, electronic bulletin board, telephone, and GIRO's Service Desk. The company's Web site is another excellent source of information on *HASTUS* improvements, new installations, events, and more.

GIRO also organizes annual and biennial international and regional *HASTUS* User Groups for its clients. These meetings include general and technical sessions designed to provide clients with an opportunity to learn how to use the latest software functionalities, exchange ideas with their industry colleagues, brainstorm with GIRO staff on real-world problem solving, and provide and gather feedback and ideas on how to obtain the maximum benefit from the software's capabilities to ensure the best possible service and return on investment.

Technology

- Delivered in 64-bit version (2012 and later).
- Leverages the Microsoft® Windows® server and desktop platform to provide a stable, productive, and familiar desktop environment.
- Supports multiple users and/or remote sites using the Windows Server Terminal Services option. Three-tier configuration supports thin-client and browser-based access.
- Features an open, integrated, and fully documented database. Supports Oracle® and Microsoft SQL Server® relational databases.
- Enables creation of standard reports, configurable lists, XML output, and Crystal Reports®.
- Offers configurable data extraction tools for sharing data with other applications. Standard interfaces allow *HASTUS* to be successfully integrated with complementary products and applications (e.g. AVL, payroll systems) from leading vendors.
- Provides Web Services for integration with service-oriented architecture such as ERP, IVR, and customer information solutions, Web sites, and for receiving transactional updates from enterprise applications. GIRO's Web Services are fully interoperable with other systems complying with industry-standard protocols such as SOAP, XML, HTTP, and WSDL.

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About GIRO – Based in Montréal, Canada, GIRO is a leading provider of software solutions for public transit services including bus, metro, tram, trolley, and commuter and heavy rail transportation. The company's HASTUS solution offers comprehensive applications and innovative tools for improved planning and scheduling, daily operations, passenger information, data analysis, and more. HASTUS combines advanced operations research optimization techniques with powerful data management tools that deliver measurable, real-world benefits for public transit associations and private operators around the world. For more information, please contact us today or visit our website at www.giro.ca