

ALTO^{*} Product Roadmap

First edition – July 2020

Confidence
must be earned

Amundi

Amundi | Services



ALTO* Product Roadmap

July 2020

Editorial

ALTO* introduces new Portfolio Management System functionalities

Amundi Services, a leading provider of Portfolio Management Systems, Dealing & Middle Office services for the Asset Management industry, presents the **first edition of the ALTO* Product Roadmap**. This roadmap introduces recent development and upcoming enhancements delivered with a continuous delivery model for Front Office, Middle Office, Risk & Compliance, Performance and Reporting.

Cécile BARJAK, Chief Operating Officer, Montpensier Finance

“Montpensier Finance implemented ALTO* Portfolio Management System in 2016. This choice was motivated by Amundi’s Services expertise as well as by the perfect integration of ALTO* with Dealing capabilities, Middle Office and pre and post-trades controls. ALTO* combines industrialized robust processes with the flexibility of a customizable environment, allowing the integration of proprietary data. The implementation of ALTO* Portfolio Management System allows us to secure our investment processes and to be fully STP, without any additional internal resources. Our partnership with Amundi Services also supports Montpensier Finance growth with, for example, a quick process for new funds creation and fast implementation of new traded instruments. On a day-to-day basis, the ALTO* platform is highly available, reliable and Amundi Services client support is highly responsive.”



Joseph EL GHARIB, Head of Amundi Services

“Since the beginning of the Covid-19 crisis and thanks to our technological, human and operational capacity, we are proud to provide a high quality level of services to all our clients. We ensure the services continuity for data management, dealing and Middle Office and we also ensure the ALTO* platform availability for the 3,700 users in 37 countries. This continuity of

services is notably due to ALTO* robustness. Indeed, ALTO* is an in-house developed platform leveraging cutting edge open-source technologies, with sustained investment in R&D for the past few years. The variety of management strategies and the geographical coverage allow Amundi and external clients to benefit from a unique, flexible, industrial and open platform. Amundi Technology, composed of more than 650 innovation and technology experts, spread over two major hubs in Paris and Dublin, is working on the development of this platform by implementing cutting-edge technologies and integrating the latest regulations. Amundi Technology is constantly adapting ALTO* to suit asset management use cases and market trends.”

ALTO

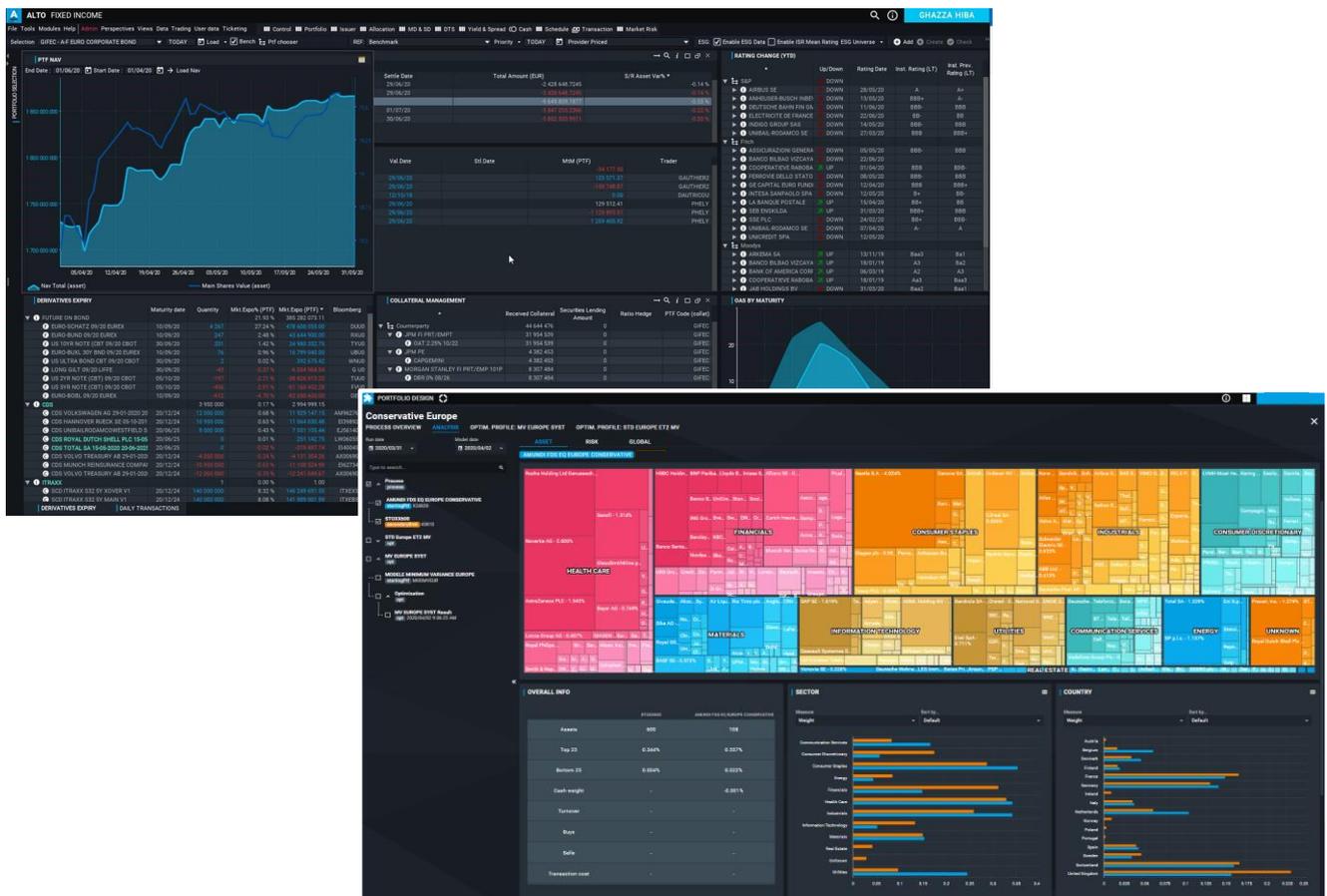
Amundi Leading
Technologies & Operations



ALTO* Product Roadmap July 2020

Emmanuel ASFAR, Chief Technology Officer, Amundi Technology

“ALTO* is an in-house project that was initiated 15 years ago, designed by Amundi Technology to pool investment management, risks and operations on a single platform. The Amundi Technology ambition is to support internal and external users by expanding the ALTO* functional coverage. During the past few years, we have significantly improved the platform with new functionalities for ESG, insurance, ETFs, index funds, smart beta, OTC products, debt products, real assets and operations. Amundi Technology aims to empower all investment strategies and trading tools with cutting edge technologies, to industrialize operations with manual task automation and crowdsourcing tool and to insure wide investment guidelines and regulation coverage and rely on highly accurate analytics. These developments are deployed on the platform in "continuous delivery" mode and are available to internal and external users.”





ALTO* Product Roadmap Summary

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What is new in ALTO* ?

A

Front Office

“Empower all investment business lines with cutting edge technologies”

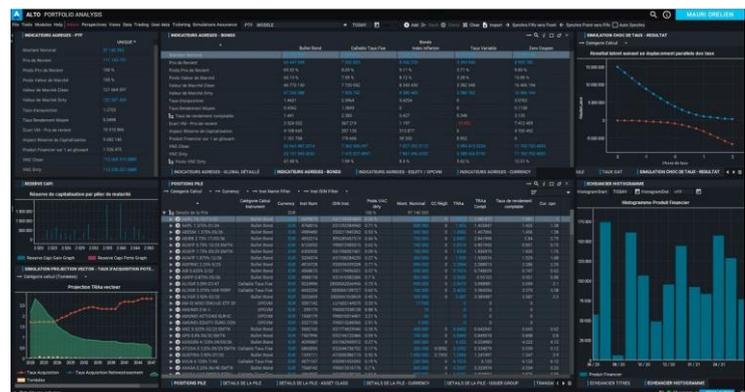
Gilles LE CORSU, *Head of Insurance & Fiduciary Management Solutions, Amundi*



“In an environment of ever-lower rates, insurers must adapt their management strategies and increase their operational efficiency. On the other hand, regulatory pressure is increasing, requiring accurate risk analysis, capital management and reporting. In order to address these challenges, insurance companies are increasingly using technology by equipping themselves with cutting-edge portfolio management systems. Within ALTO*, the manager is able to control the regulatory capital charge limits, monitor the return on his positions, control his risk ratios, calculate the cost of capital or obtain a projection of his accounting result.”

Insurance

ALTO*'s Insurance functionalities are based on the latest accountant's inventory received from custodians (CACEIS, BPSS, BNY Mellon, State Street, etc.). These positions are enriched with all transactions and corporate actions in order to have a real time view of the FIFO stack. ALTO* Insurance also recalculates the accounting indicators (unrealized value, impact on the capitalization reserve) enabling managers to have a real time view of their portfolios and to simulate the impact of a purchase or sale on the accounting aggregates. The ALTO* platform also includes a reporting module that enables the production of client reports. ALTO* Reporting is based on management, risk and performance views and enables the creation of white label templates in the desired format (xls, csv, etc.) that can be used for both operational and regulatory monitoring purposes.



*ALTO: Amundi Leading Technologies & Operations

What is new in ALTO* ?

Solvency II

The **Solvency tool** is a dedicated module to produce Solvency II reports. Amundi also implemented a new process in order to produce enhanced regulatory reports. This module, fully interfaced with other ALTO* modules, is compliant with the Solvency II standard model, it calculates SCR and the impact of market stress. This process is based on an indicator calculation engine developed internally, including research analytics.



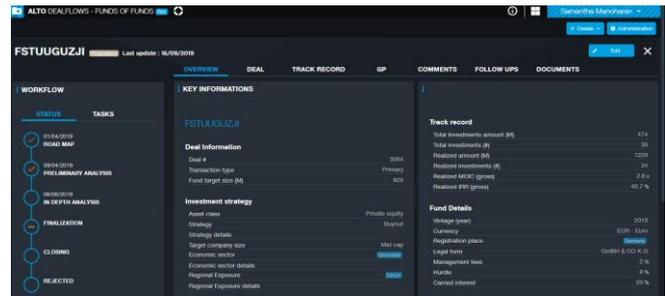
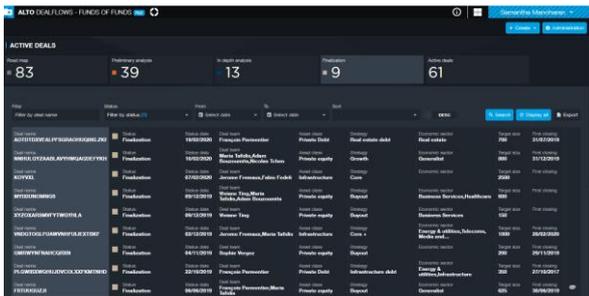
Julien GENIS, COO & Deputy CEO, Amundi Real Estate & Amundi Private Equity



“Real assets and private markets have a growing weight in institutional and retail investors’ asset allocation. At Amundi, this expertise represents €53 billion in AuM¹ and is managed in a single investment management platform handling all the assets acquisition process: sourcing, execution, monitoring. A specific Dealflow tool within the ALTO* platform was developed for all investment teams covering all asset types to monitor sourcing, transaction progress and follow-up of assets. In addition, private markets assets position keeping functionalities are gradually being added to the platform enabling fund managers to view listed and non-listed positions on ALTO*.”

Dealflow for Real Assets

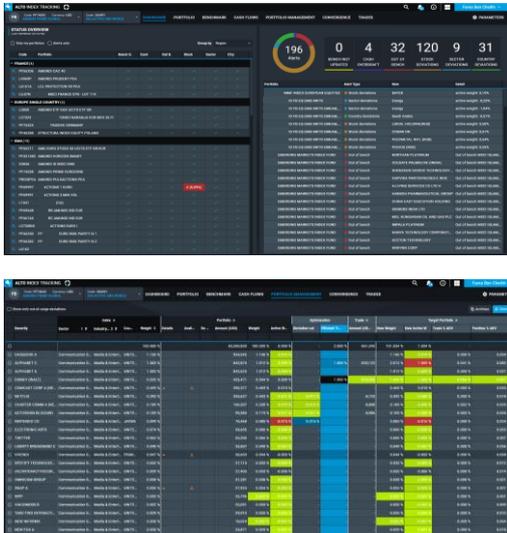
ALTO* Dealflow is a dedicated module for the real assets activities. This solution offers the opportunity to register new deals and attach the associated documentations (financial reports, tax documents, etc.). The tool monitors the deal status and produces daily or weekly activity reporting.



1. Source: Amundi figures as of December 31, 2019.

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What is new in ALTO* ?



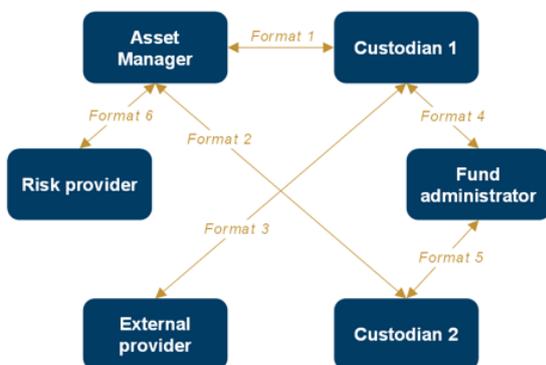
Index Tracking

ALTO* Index Tracking is a dedicated module to industrialize the equity index investment process. The aim of this new module is to automatize the index replication using Python convergence algorithms respecting the portfolio constraints. It also aims to centralize in a single tool the management of securities transactions, portfolio vs benchmark analyses. This module is scalable and offers a better user experience to portfolio managers. This module also secures the management process through full integration with ALTO* modules (e.g. trading data).

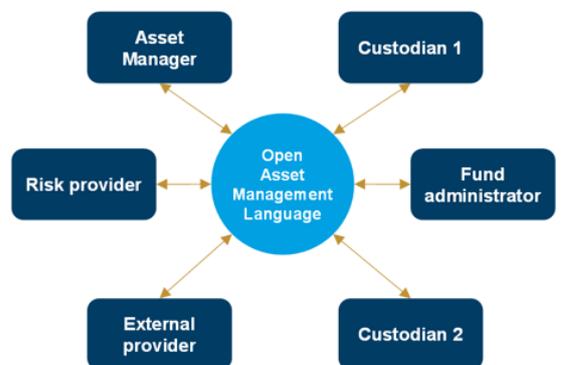
Open Asset Management Language

Open Asset Management Language is a data dictionary that models the main business objects in the asset management world, for the portfolio inventory or the asset associated with the positions (securities, OTC or index). This data exchange standard covers a range of data across the lifecycle – from order management to risk, compliance, Middle Office to reporting. The objective is to use this dictionary to ensure standardized messages and reference data for the ALTO* interaction between all modules and also with our external partners. Please visit the website to learn more: <https://www.openamlanguage.io/>

Without a standard pivot format



With Open Asset Management Language



1. Source: Amundi figures as of December 31, 2019.

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What is new in ALTO* ?

A

Middle Office

“Industrialize operations with manual task automation and crowdsourcing tool”

Christine GENTIL, *Head of Middle Office, Amundi*



“The Amundi Middle Office teams manage post-trade operations, reconciliation, position keeping and reporting for Amundi’s asset managers and on behalf of Amundi Services’ clients with a single platform, ALTO*. Within the development of Amundi and new Amundi Services’ clients, ALTO* helps us to manage the growing volumes of operations. We work side-by-side with Amundi Technology to improve ALTO* with new functionalities to increase the automation, industrialization and reliability of the platform.”

Accountant Reconciliation

ALTO* Reconciliation Accountant module has been improved with Machine Learning for reconciliation and matching between Front and Fund Administrator positions. The aim is to automate and secure the reconciliation process and allow the operational team to concentrate on more value added tasks. This solution is based on algorithm with self-improvement of matching rules through monthly updates. This enhancement allows the improvement of matching rate and also the re-use by the machine learning algorithm of matching errors and comments.

Ticketing



[Click here to discover the ALTO Ticketing demonstration](#)

ALTO* Ticketing is a crowdsourcing tool to identify and share an error or a discrepancy about a data in the platform. The solution provides a transversal view across ALTO* and informs all users about data issues. As soon as an error is detected



and qualified, a notification is directly sent through the tool to the team in charge of the resolution. A configurable dashboard is available to follow data issues processing.

What is new in ALTO* ?

PRIIPs, Packaged Retail and Insurance Based Investment Products

The PRIIPs regulation objective is to standardize and improve the pre-contractual information (risks, performance and costs) given to non-professional investors for insurance-based products, to help them make investment decisions. Amundi tools and processes are now fully compliant with the PRIIPs regulation.

In addition to the standard KID reporting, the following information is now provided to the investor:

- Performance scenarios: disaster, unfavorable, moderate, favorable;
- A synthetic risk indicator: SRI;
- Information on costs and market impact;
- Qualitative information.

Market Abuse

A new partnership with a best-of-breed market abuse provider has been implemented to replace the previous AML (Anti-Money Laundering) screening functionality. This screening solution identifies whether a person or third party linked to a transaction is subject to International Sanctions (including OFAC) or present on surveillance lists as part of the anti-money laundering and the financing of terrorism (AML/CFT).

What is new in ALTO* ?



Performance

“Improve quality of performance analysis reporting“

Laurent TIGNARD, *Head of Multi-Asset, Institutional Solutions, Amundi*



“Portfolio managers actively support the development projects of the performance attribution tools: Contribution Tool and best-of-breed model. Contribution tool allows us to have contribution to performance in an efficient and autonomous manner. This tool helps us to respond quickly to RFPs and specific client requests. The developments will allow us to add the necessary allocation and selection effects to our management process.”

Multi Assets Performance Attribution

ALTO* Performance Attribution module has been improved recently with new functionalities for multi asset investment team. The tool is now fully automated, secure and produces quality performance attribution reports for clients and portfolio managers. These reports provide performance explanation with multi-factor and strategy breakdown capabilities and support portfolio managers in monitoring their activity.

The first major improvement is the addition of new instrument mapping to a best-of-breed computation engine (for Futures, Forex and credit derivatives) and the enhancement of look-through functionalities for Benchmarks, ETF and Futures. Moreover, best-of-breed model has been implemented for fixed income analysis for Multi Asset funds with allocation & selection effects, and additional fixed income effects: curve & spread effects based on the FIPA balanced model.

In addition, in order to produce high quality reports, automated consistency and data loading controls have been implemented in ALTO*.

ALTO* Performance Contribution benefits from a robust and industrialized internal performance contribution computation engine for all asset classes. This engine is able to manage hedged and composite benchmarks and to implement allocation and selection effects.

What is coming next?



Front Office

“Empower all investment business lines with cutting edge technologies”

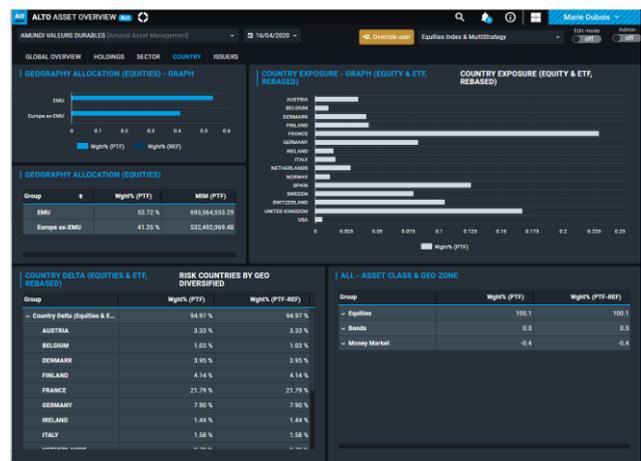
Romain SAUVAGE, *Head of Product & Marketing, Amundi Services*



“Asset Managers and Institutional Investors delegate the management of funds and mandates to third party companies. They need to oversee their investment for various analytics (compliance, risk, etc.). ALTO* Asset Overview is the solution to capture delegated assets. It enables clients to operate post trade compliance and control risk analytics for a wide range of asset classes.”

Asset Overview

ALTO* Asset Overview consolidates with transparency all assets delegated to external third parties in a single platform. The solution covers the daily integration of asset holdings for a wide range of asset classes including the most complex OTC instruments. It also helps secure data governance process for the integration, enrichment of quality control of a variety of datasets. The solution allows the client to have a 360° view of its assets in a single platform and to oversee the compliance, risk and performance analytics.

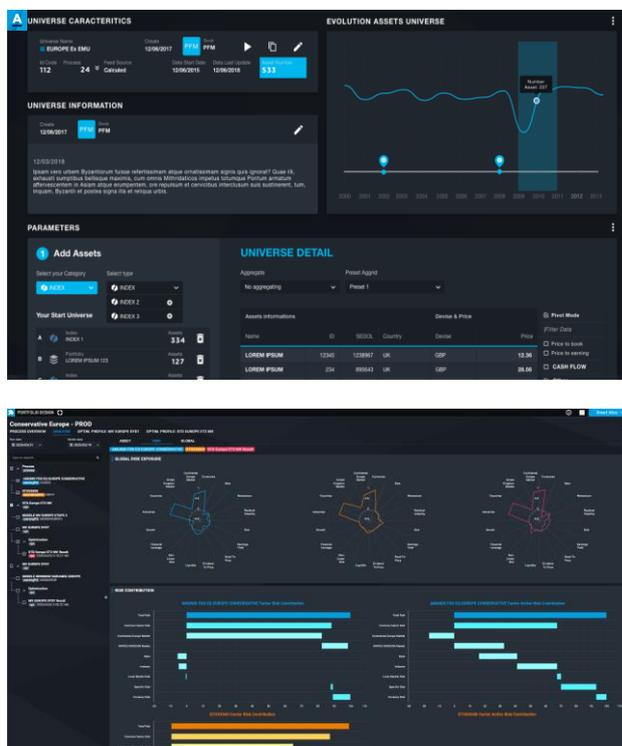


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What is coming next?

Portfolio Design

ALTO* Portfolio Design is a dedicated portfolio construction module based on optimization. This module completes a wide range of functionalities for portfolio managers with advanced coding capabilities. It is an open architecture tool designed to adapt to new optimization methodologies as equal risk contribution, Black-Litterman, factor investing, custom, etc. This tool is highly flexible and can be configurable for different portfolio construction strategies. ALTO* Portfolio Design stands as a portfolio construction platform and covers the value chain from construction, taking into account customized constraints including ESG data and specific filters, to portfolio rebalancing and trade programming.



ESG data

ESG challenges are very important for the Asset Management industry and Amundi decided to be a major actor in this change. To allow and facilitate this transformation of ESG criteria integration, the ALTO* investment platform will be enhanced to take into account new business requirements and ambitions.

New ESG features in the ALTO* platform will simplify and secure the management of all ESG data and related processes. The objective is to improve controls and reduce manual processing to prevent incidents. ESG functionalities will be based on an automated and integrated ALTO* platform allowing automated data integration from external providers and the data scoring from calculation to distribution into the ALTO* platform.

What is coming next?

Investment Research

Amundi is working on **ALTO* Investment Research** to create a single and direct access for portfolio managers to market data and analytics. The objective is to facilitate the daily usage of all data available by investment team, to empower and support investment decisions. ALTO* Investment Research centralizes all the research materials produced by the analyst teams and makes it accessible for the Portfolio Managers. The tool is interactive to foster the communication and exchange between all the teams involved in the investment process.

Private Debt Management

Amundi is working to enhance the **Platform of Alternative and Real Assets (PARA)** with new functionalities to support a new operating model for **Private Debt**. This project is a combination of a best-of-breed partnership and ALTO*.

The partnership covers the asset side to manage the master security data and position keeping. ALTO* developments will cover the liability side to manage investor operations and reporting for clients and regulators. The main objectives are to reduce operational risk, reinforce the value chain processing (asset, liabilities and reporting) and to enhance data and client reporting quality.

This new Private Debt solution will enable scalability capabilities, business development and high volume processing for the Amundi PARA business, but also for Amundi Services clients who will benefit from this new operating model.

Management Dashboard

ALTO* Management Dashboard will provide aggregated information from portfolios, internally or externally managed, to monitor their exposures to various risk factors. Web based and easily configurable, it enables analysis at asset management level, investment center business lines and portfolio group level.

What is coming next?



Middle Office

“Industrialize operations with manual task automation and crowdsourcing tool”

Cash Management

ALTO* Cash Management module will be redesigned and harmonized to manage and apply the cash investment policies of Amundi and external clients.

- The first evolution will be the creation of a delegation screen directly in ALTO*. Portfolio Managers will have the possibility to delegate the cash management to the Middle Office team and specify all constraints for cash investment. The objective is to facilitate the cash management process between all teams involved and to improve information traceability.
- The second major evolution is to harmonize and optimize the cash process by implementing a limited number of processes. These processes are designed by Amundi’s portfolio managers and cash management teams. These investments processes are highly flexible and can be customizable to meet Amundi Services clients requirements.
- ALTO* cash management module will also be enhanced to include new ratios and cash analytics.

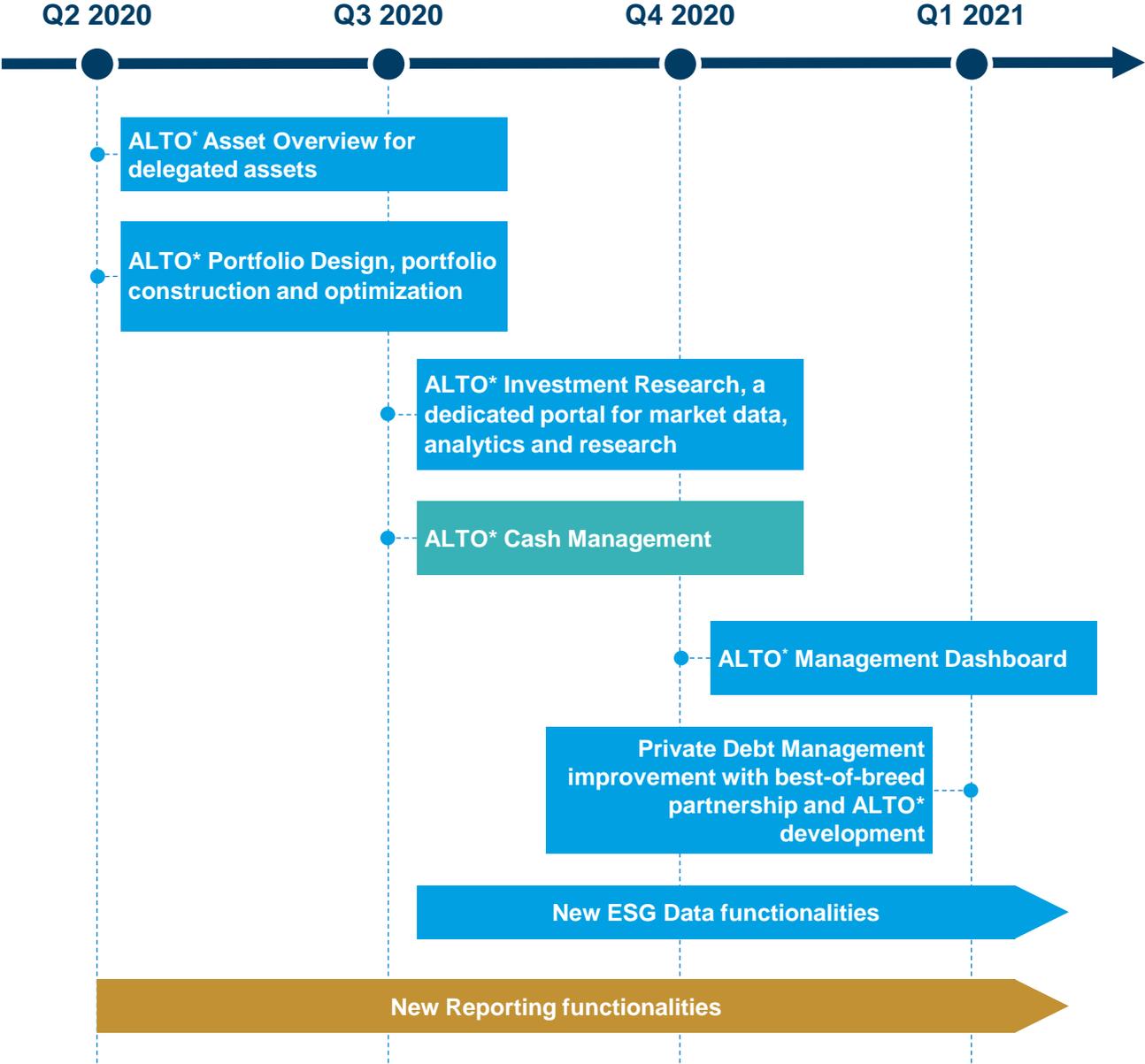


Reporting

ALTO* Reporting module will soon produce additional retail factsheets for Japan, the US and Italy. The reporting tool will also integrate Middle Office KPIs to produce automated global dashboard by location and team. In order to support and contribute to Investment Management Committees, automated reports and dashboards with historical data and key indicators will be produced by ALTO* Reporting.

As a part of ALTO* ESG plan, ALTO* Reporting is equally evolving to extend ESG reporting requirements.

Project Timeline



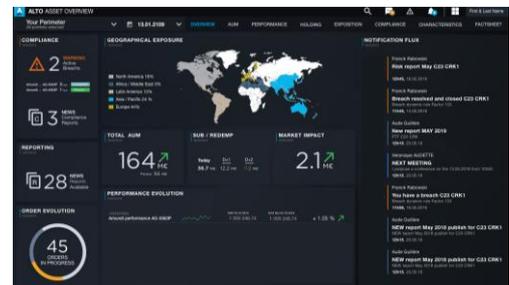
This timeline highlights Amundi Technology’s main improvements over 2020 that will be available to all clients. In addition to these improvements, ALTO* benefits from very regular updates based on a continuous delivery model in a fast, sustainable and efficient way

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About ALTO* and Amundi Services

ALTO* Portfolio Management System

ALTO* is Amundi's Portfolio Management System (PMS) covering the entire Asset Management value chain and providing a 360° portfolio view for all asset classes. ALTO* offers a cross-asset and integrated front-to-back solution, covering the entire investment management life cycle, including position keeping, portfolio analysis and simulation, order booking and execution, compliance, performance and reporting. Its comprehensive functional flexibility allows to adapt to all types of investors: Asset managers, Insurance companies, Pension Funds, Family Office. ALTO* fully integrated solution provides a 360° view of all information required to analyze, manage, control portfolios. It covers all asset classes and facilitates portfolios managers decision-making in real-time.



Front-office



Compliance & risk



Performance



Middle Office



Reporting



Data management

Amundi Services

Amundi Services offers outsourced solutions for technology & operations and makes the ALTO* platform available to external asset managers and institutional investors. Amundi Services supports clients reshaping their operating model and is committed to provide high value and quality services to his clients, based on reliable, industrial and fully integrated set of services.

- **Dealing** activities outsourcing for all asset classes and geographies
- **ALTO***, the **Portfolio Management System (PMS)**, a software with a set of technology and operational services (Dealing, Middle Office and Data Management)
- **Fund Hosting via ManCo services** in France, Luxembourg, Austria and Ireland with a set of value-added portfolio management services and distribution support

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ALTO*

Fund
Hosting



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ASSET MANAGEMENT