

Astadia Mainframe Modernization Solution

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Experience & Digital Engineering | Cloud
Data & GenAI | Quality Engineering



Astadia's Game Changers



100% automated code refactoring



Highly scalable (numerous Fortune 100 references at scale)



Hyperscaler agnostic – Public/Private cloud



100% functional equivalence



Delivered using your CI/CD pipeline



Automated testing



Target Java or .Net stack



Aggressively merging GenAI with proven IP

Market Leading Mainframe Modernization Vendor

ISG 2025 report
names Astadia
as a market
leader

Best Banking
Infrastructure
Platform- 2025
Fin Tech Award

300+
Successful Projects

100%
Automated Code
Refactoring

26+yrs
Average consultant
experience

97%
Success Rate



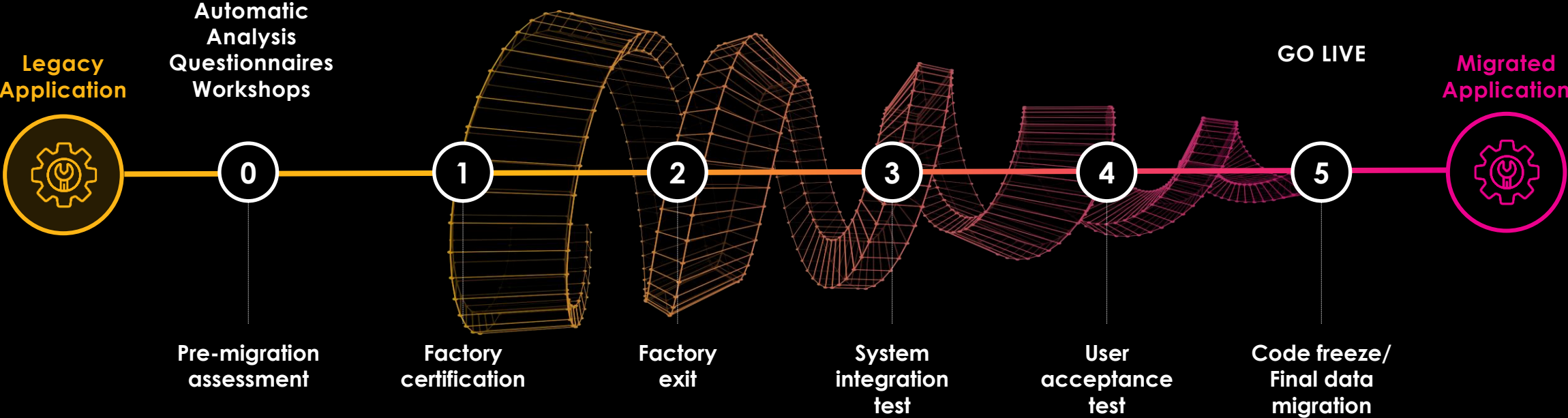
FastTrack The Process



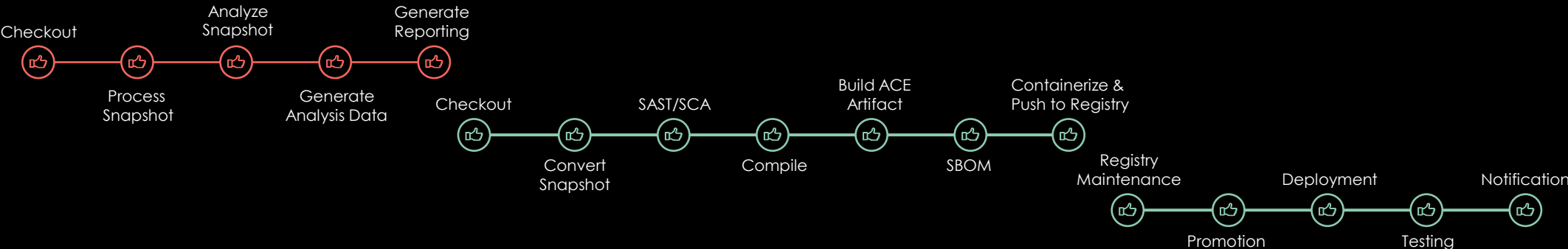
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Astadia's Refactoring Solution



Project CI/CD Pipeline

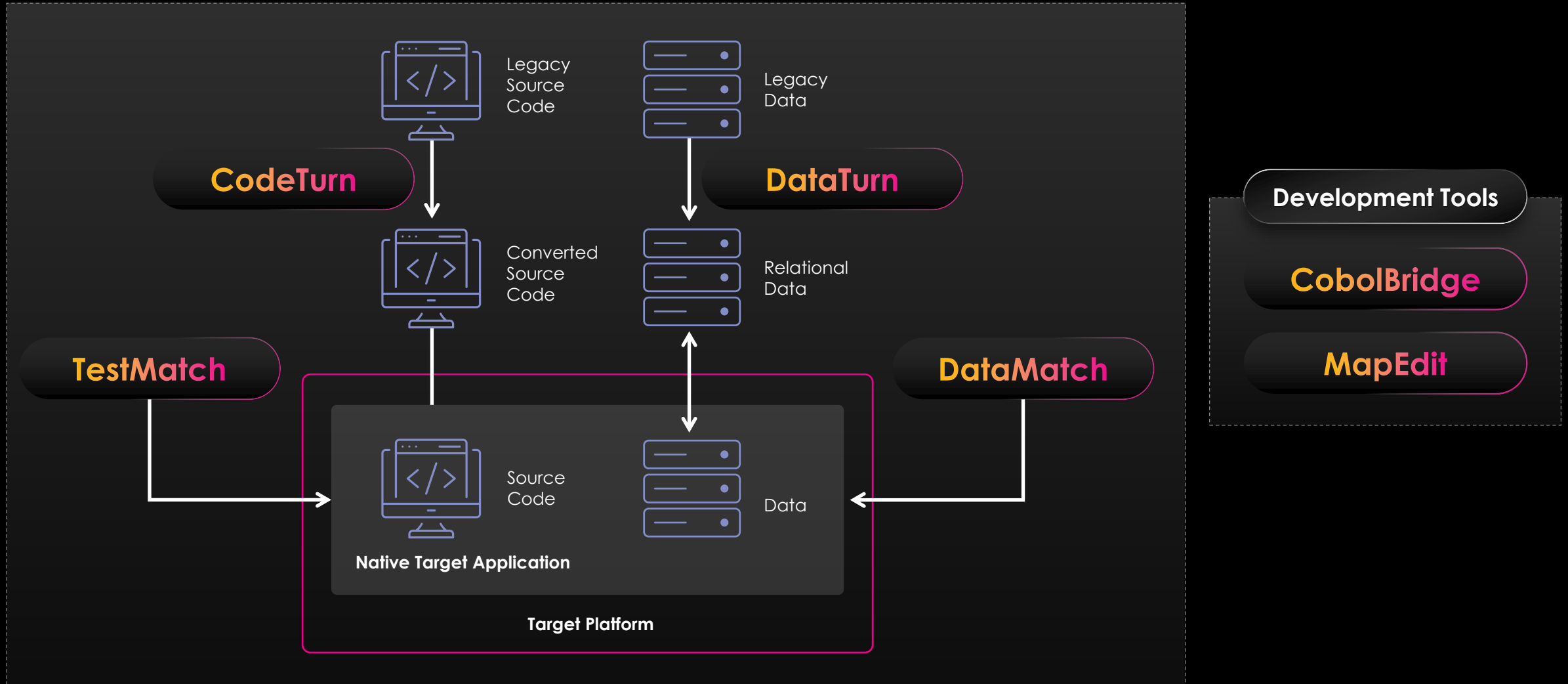


FastTrack The Migration Factory

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What is Needed: Automation



CodeTurn: Automated code transformation

Astadia's code conversion capabilities offer the widest range of migration options along with the highest level of automation



Concise and with minimal code bloat



Configuration options for the conversion tools to tune the output



No concessions to reach **100% automation** to be able to transform millions of lines



No limitations on further post-migration enhancements



Proven case studies of maintainable code available



Result: legacy mainframe applications running refactored in the Cloud

CodeTurn

From:	To:
COBOL	Java
	C#
Natural	Java
	C#
IDMS / ADS	COBOL
	Java
	C#
Assembler	Java
	C#
JCL	PowerShell
	Bash
PL/I	Java
	C#

DataTurn: Automated data conversion

DataTurn combines a design tool that optimizes the new database structures with tooling that builds the ETL components for actually moving the data



Data Conversion **from A to Z**



Data analysis on the source DB (volume, occurrences...)



Optional **interactive configuration** permits tuning of target database model



Unload/Transfer/Load scripts for **100% automation**



Data validation on target DB (completeness, correctness)



Result: Target DB that is **truly relational** (CRUD)

DataTurn

From	To
ADABAS	Db2 z/OS
IDMS	Oracle
Db2 z/OS	Db2 LUW
IMS DB	SQL Server
VSAM	PostgreSQL
UDS	Aurora
...	...

TestMatch: Automated Online Testing

TestMatch



Record original application behavior on the source system.



Replay onto target system and **compare** behavior with original.



Integration with **ticket tracking systems** to report and follow-up on detected differences.



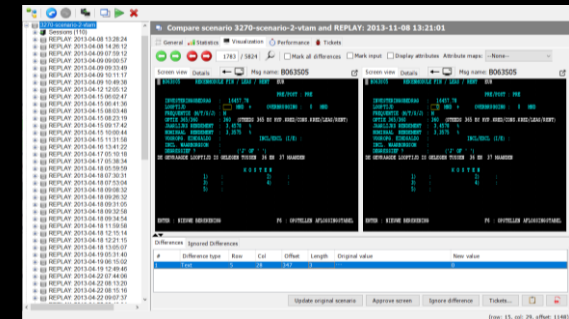
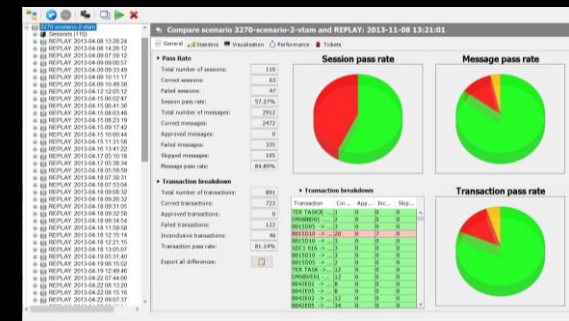
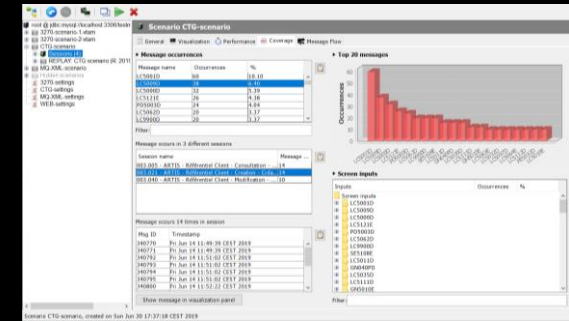
Same recording is used throughout project phase in automated **"convert-replay-compare-tune"** cycles



Functional as well as **performance** and **endurance** tests; computation of **test coverage**.



Can be integrated in **CI/CD pipelines**.



DataMatch: Automated batch testing

DataMatch is used to confirm batch processing occurred correctly by ensuring accuracy of data was updated

DataMatch



Validate **iso-functional behavior** of migrated batch jobs and data intensive online applications



Three-way compare of database states on source and target platforms: 1: before 2: after/reference 3: after/actual



Integration with **ticket tracking systems** to report and follow-up on detected differences



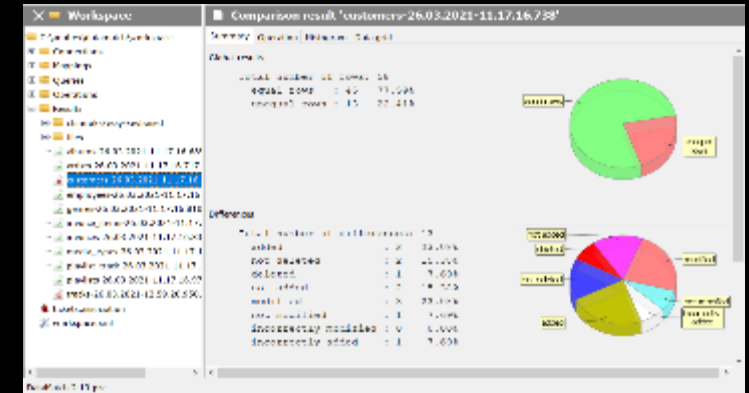
Highly configurable: what tables to compare, what key-ranges, what columns



Can be **scripted**, e.g. start comparing as soon as job complete

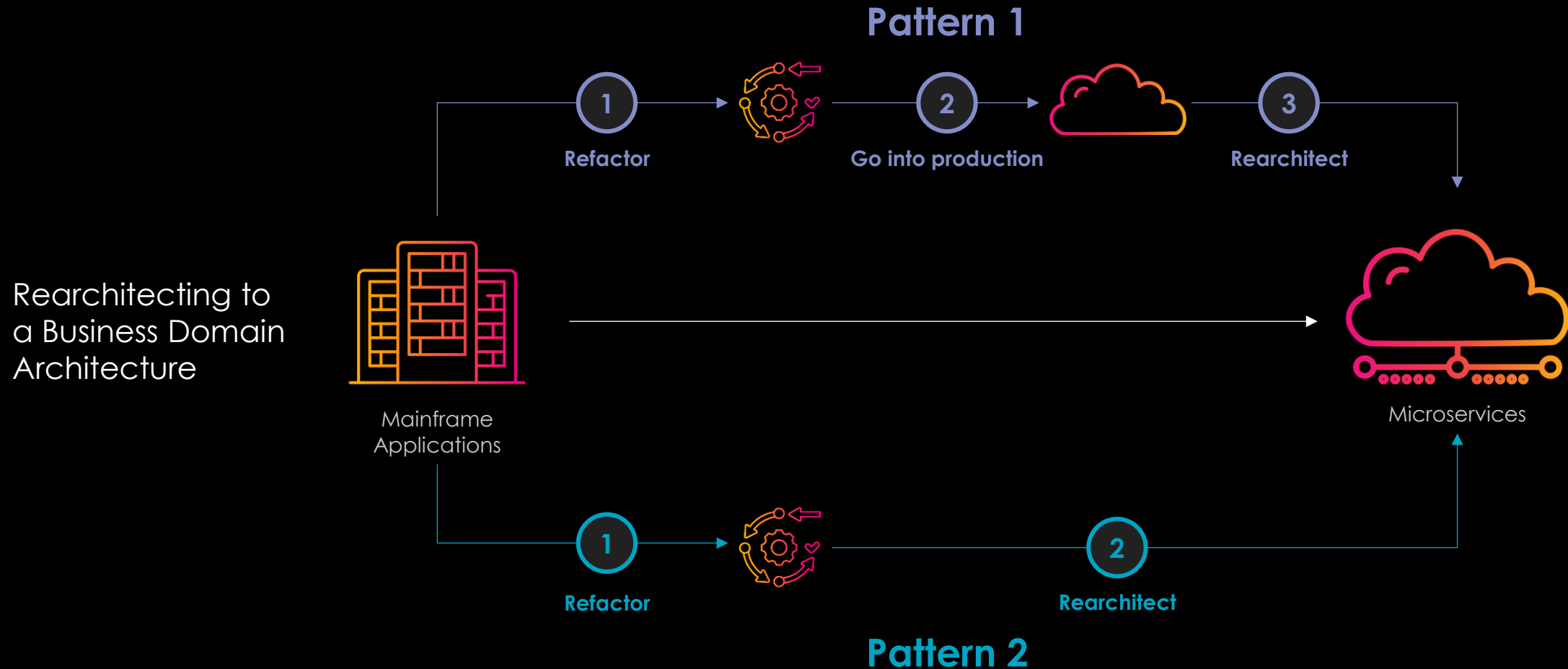


Can be integrated in **CI/CD pipelines**



The Journey from Mainframe to Microservices

Mainframe Transformation Options



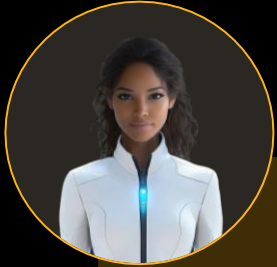
Continuing the Modernization Journey Leveraging GenAI

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Transformation Intelligence for Next-Gen Applications [TINA]

TINA is a digital consultant designed to accelerate the development journey from a refactored application to a new rearchitected application using microservices.



Understands & documents refactored applications

Extracts business functionality

Interactive ChatBot for developers

Responds to request for documentation and developing specifications for APIs and new micro services capturing relevant business functionality for specific use case

Provides an Agent interface to our classic discovery and refactoring tools

Astadia Modernization Agent & Code Assistant

Specifically designed to provide modernization workflow



DISCOVERY

Enhanced, interactive application discovery



CONTEXT

Builds detailed documentation of application and semantic understanding of business logic



OTHER INPUTS

Understands external design docs, coding standards docs and APIs



CODE GENERATION

Builds API framework for services and populates with business logic from application

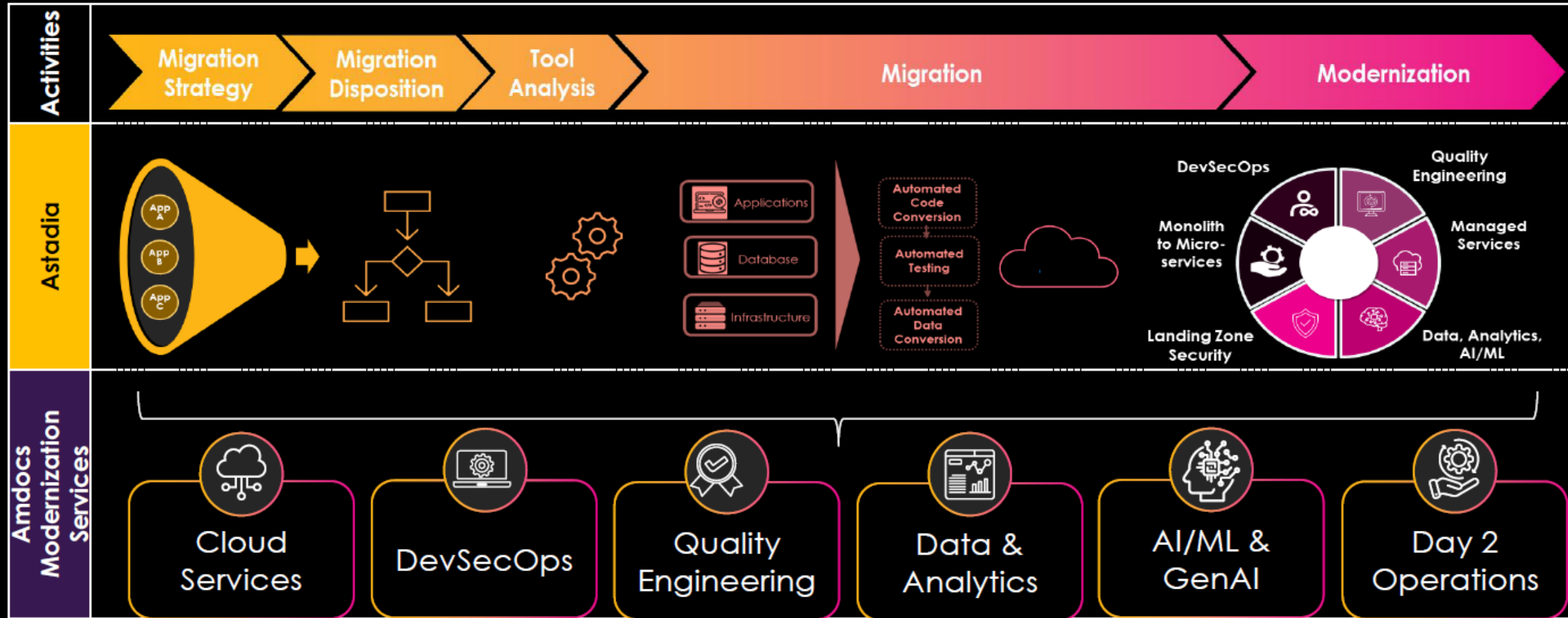


Human in the loop validation at each step of the process

LLM Agnostic | Limits exposure of customer source code to external models

End-to-End Modernization Program Execution

Amdocs Prime SI



Success Stories

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Deutsche Bank | Deutsche Asset Management (DWS)

Sector: Financial Services



Deutsche Bank



MOTIVATIONS

- IKS on obsolete platform (Natural & Adabas)
- Impending skills issues
- Reduce costs
- Improve efficiency
- Increase agility



SOLUTION

- Migrated Natural code to C#
- Converted Adabas data into a modern stack (SQLServer)
- Entire-X replacement
- JCL replaced by PowerShell
- How?: Astadia FastTrack Factory
 - CodeTurn
 - DataTurn
 - TestMatch
 - DataMatch



IMPACT

- Cost savings of over €5,750,000 per year
- Eliminated obsolete technology
- Batch performance: duration of most challenging program went from 179 mins to 39 mins
- The applications now run in a modern environment on a fully virtualized server platform.
- Established one development team for front-end and back-end
- Further enhanced the application into a digital investment platform that is now offered to the market

5,750,000 Euro
annual savings

Migrated **1.3 million lines of code**
and converted **15.TB of data**



MOTIVATIONS

- Eliminate mainframe with obsolete technology (Adabas & Natural)
- Impending skills issues
- Reduce maintenance costs
- Improve efficiency
- Increase agility



SOLUTION

- Migrated the bank's mission-critical systems to a cloud computing architecture.
- How?: Astadia FastTrack Factory
 - CodeTurn
 - DataTurn
 - TestMatch
 - DataMatch



IMPACT

- Cost savings
- Eliminated obsolete mainframe technology
- Increased agility
- Further modernization using the Astadia FastTrack Factory

"Some of our core business applications received a technical upgrade, with major impact on all functions of the entire system. We have been using TestMatch heavily to automatically compare the functioning and performance of the upgraded applications with our previous systems. Doing this we did not only save several hundreds of man-days in testing, but we also improved the quality of the tests itself" - Deputy CIO SGBT Luxembourg

U.S. Air Force

Government



U.S. AIR FORCE



MOTIVATIONS

- Increasing operating costs were expected to surpass \$29 million annually in 2020
- Dependence on a shared-services mainframe environment placed constraints on system enhancements
- Diminishing availability of skilled mainframe experts
- Limited integration and analytics capabilities were an obstacle to innovation.



SOLUTION

- Migrating the USAF's most complex Unisys 2200 COBOL application to the cloud (Microsoft Azure)
- The system's legacy Unisys DMS data was moved to AzureSQL
- Deployment of DevSecOps, DevOps and Agile methodologies
- Implemented advanced analytics and predictive maintenance programs



IMPACT

- Preserving existing investments in the system
- System operating costs reduced by 82.7%
- Reduced release cycle frequencies from 2 to 4 per year to an agile on-demand release process.
- 92% improvement in the team's capacity to respond to the USAF's changing needs and requirements.
- Enabled further digital transformation initiatives

82.7% Annual system operating cost reduction

The project won the **Distinguished Award for Excellence in Engineering** by the Armed Forces Communications and Electronics Association

