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## 1 IMS Replacement: In Time - In Budget - In Scope

**Gothaer Systems migrates its IBM IMS Databases to IBM Db2 together with Delta Software Technology.**

Automatically migrating from  IBM IMS/DB to IBM Db2 was Gothaer Systems' task. The goal of operating only one database system on the mainframe brought Gothaer Systems and Delta Software Technology together. Delta offered the solution of know-how, suitable tools and services for this task. By building a tailor-made factory with the AMELIO Modernization Platform, the necessary steps for the transformation could be implemented automated, well calculated and at low risk.

### Gothaer's motives

The maintenance and costs of two database management systems on the mainframe (IBM z/OS) are expensive, tie up resources and slow down innovation. The knowledge or knowhow carriers about IMS/DB will soon retire and young developers in this field are hardly available. For these reasons,

Gothaer Systems (Gothaer) sought to migrate its IBM IMS/DB stored data to new IBM Db2 structures. The IMS/DB calls in existing database access programs (COBOL and Delta ADS) were to be implemented automatically in such a way that the IMS databases were completely replaced. The runtime behaviour and the performance of the converted programs were not to be impaired.

*"By migrating from IBM IMS/DB to IBM Db2 together with Delta, we have successfully mastered the next big step in the 'Smarter Mainframe' project."*

**Burkhard Oppenberg,**  
 CIO, Gothaer Systems

Due to the volume, the scope of the required adaptations, as well as a tight timeframe, a manual transformation did not seem advisable. High demands were placed on the quality of the adaptations to be implemented in order to reduce the test effort and duration. These requirements were met by an automatic transformation. For this purpose, Delta Software Technology (Delta) used the AMELIO Modernization Platform (AMELIO) and built a tailor-made transformation factory for Gothaer.

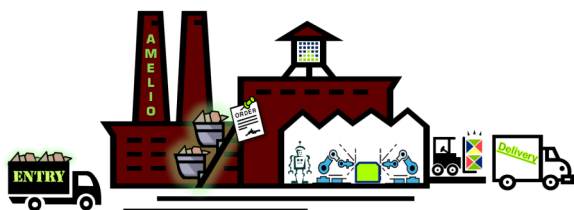




### Advantages of the Delta Solution

For Gothaer, the following advantages of the Delta solution were particularly important:

- Tailor-made (automated) transformations
- Transformations can be retraced and reproduced at any time.
- Further development and maintenance are not impaired
- No freeze periods
- No foot-print or vendor lock-in, hence no follow-up costs for licensing
- Implementation in budget with a fixed price

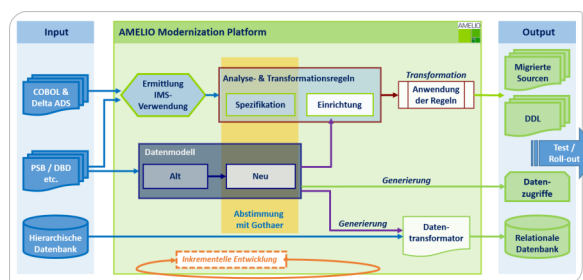


### Large-scale Project successfully completed

#### Transformation of programs and data models according to customer requirements

At the beginning, all applications were analysed for data accesses and an initial set of rules was defined for how the new Db2 accesses should look and how affected code should be transformed. In addition, proposals for the relational data base models were created by Delta and coordinated with the Gothaer. Data services for the data accesses and data transformers were then generated from the models fully automatically.

Thus, in close coordination between Gothaer and Delta, the AMELIO Modernisation factory was successfully trained and continuously expanded. Coding standards and specifications by the DB administrators were also considered. During the setup phase, the regular maintenance and further development continued at Gothaer. The resulting new versions of source modules were included into the ongoing AMELIO work. After successful transformation of the applications, they were handed over to Gothaer for meta-level testing and release.



#### Approval and Test of the Applications

To verify that the factory was working correctly, an application test was performed based on the meta-level test concept. This concept is based on the fact that if the factory correctly implements a rule once, it will always implement it correctly. With a factory approach, the tests can therefore be limited to a test set of representative test cases that cover all analysis and transformation rules. As a result, Gothaer was able to drastically reduce the testing effort and save expensive testing time.

*"With Delta, we have found a reliable partner. A constructive cooperation with ideas and 'short paths' has made this project a success."*

*Stephanie Bethmann, Project Management*



## **Conversion of Data Access and Data Transformation**

The changes in the COBOL and ADS programs should be as small as possible. For this reason, the accesses to the Db2 databases were outsourced to data services generated by Delta. In doing so, existing data services from Gothaer were used. This decoupling of application and data access has the additional advantage that not every later change to the database model has a direct impact on the calling programs.

Based on the new data models, data transformers could also be created fully automatically, which transferred the data from IMS/DB to Db2.

### **The Project**

Migration of central applications and data from IBM IMS/DB to IBM Db2 in 2 years:

- Data model transformation
- Application transformation
- Data migration

#### **Sources**

- 45,000 sources (COBOL & Delta ADS)
  - 50 million Lines of Code

#### **Databases**

- 447 IBM IMS/DB data bases
  - 343 automatically converted to IBM Db2
  - 15 manually converted to IBM Db2
  - 89 removed

#### **Changes**

- 12,481 changes
  - 5,513 IMS accesses
  - 6,968 access periphery

## **In 2 Years from IMS/DB to Db2**

The conversion was implemented in manageable packages and not with a big bang. In 2 years time, all requested IMS databases and all of their data and applications have now been successfully transformed to Db2 and are in productive use.

*"As ProjectOwner, I am particularly pleased that the well-calculated IMS/DB replacement with Delta went so smoothly and on time, and that the result is convincing across the board."*

*Michael Buchwald, ProjectOwner*

## **The Project from Gothaer's Point of view**

The Gothaer is more than satisfied with the project, all work carried out at a fixed price. They appreciate the flexibility with which Delta responded to challenges and how easy it was to provide the factory with changed versions. The performance was considered and optimized together in order to be able to guarantee the usual performance with Db2 as well, and thus to achieve the best performance potential of the applications.

In addition, the new data models meet the current requirements, they are future-proof and enable new and more flexible accesses. For example, attributes can now be addressed individually in SQL queries instead of using predefined keys.

The meta-level testing is also mentioned prominently - massive cost savings could be realized here, since each change did not have to be viewed manually.

The entire migration project ran smoothly and without any downtime – on the contrary: Gothaer was able to further develop the applications in parallel.



At Gothaer, the replacement of old technologies is a further step in the modernization of its IT landscape. The complete connection of today's operative systems on the host - in the context of new projects - is made much easier and makes a decisive contribution to the digitalization and the accelerated implementation of new technical requirements.

### About Gothaer Systems

“Gothaer Systems is the central IT service provider of the Gothaer Group. We ensure that Gothaer is always at the cutting edge of information technology: through innovations and continuous further development of technology and organization. We also provide the infrastructure for accessing data and business processes. This is how we ensure a high level of IT quality within the Group - and thus support Gothaer's business.”



### Get to know AMELIO and Delta

Due to the high degree of automation, transformations can be repeated, comprehended and reproduced at any time. Freeze periods are reduced to a few hours. The migration can be divided into packages and the result is applications that can be continuously used and maintained without footprint and vendor lock-in.



- Would you like to learn more about modernization projects or are you planning refactorings?
- Do you want to migrate an application package to a new platform?

Like Gothaer and other customers, go the well calculated, secure and perfect way with Delta and consolidate your database systems. We would be

happy to show you the possibilities offered by the AMELIO Modernization Platform. We are looking forward to your contact.

**IMS Replacement: In Time - In Budget - In Scope**  
Gothaer Systems migrates its IBM IMS databases to IBM Db2 together with Delta Software Technology.  
[Read more ...](#)

### Further Information

Here you can find more articles on the subject:

- [Provincial realizes complete migration from IBM IMS/DB to IBM Db2 with Delta](#)
- [Automatically replacing IBM IMS/DB](#)
- [Successfully Replace IMS Databases](#)
- [IBM IMS/DB? Modernization Now!](#)
- [Modernization Project at BSQ Bauspar AG](#)

## 2 SVA Mainframe Dayz 2022

From March 9th to 10th, 2022 we were at the SVA Mainframe Dayz 2022 in Wiesbaden, Germany!



Delta Software Technology were present with a booth and presentation. On March 9th, 2022 at 2:30 p.m., Dr. Daniela Schilling:

### “Successful Automatic Database Migration at Gothaer: In Time - In Budget - In Scope”

You could not attend? Here you can [request the presentation slides](#).



Only available in German. If you are interested in an English version, please [contact us](#) directly.

### Review: Mainframe Dayz 2021

In a monthly event series, the Mainframe SpeakZ, SVA again gave the mainframe a voice.

With a diverse mix of customer presentations, industry news, tool updates, and more, SVA keeps you up to date on all things mainframe.



Delta Software Technology was there with a presentation:

**“Application modernisation  
according to your requirements,  
parallel to ongoing operation”**

Dr. Daniela Schilling (CEO Delta Software Technology) explained sticking points and pitfalls in large modernization projects and showed solutions based on a large project at a leading German insurance company.

### Contents

The foundation of business-critical applications has often evolved over decades. During this time, the applications were changed and further developed. New technologies were introduced, partly without completely removing the old technologies.

Modernisations such as clean-up, refactoring, technology exchange and standardisation as well as platform migration are necessary to meet new requirements, improve performance and maintainability, and increase the sustainability of the back-end applications.

The documentation of the applications and the knowledge about what was implemented and why it was implemented that way has been lost over time.

- So, how do you regain the required implementation knowledge?
- What do you do with the dependencies?
- What about the risks?
- How do you find all the sticking points?
- How do you organise parallel changes and further development?
- What must be tested?
- How do you securely manage (testing) efforts, costs and risks?
- ...

The solution lies in the precisely targeted analysis prior to a modernisation project, the complete automation of the changes and the flexible organisation of the project processes.

Referencing a large project at a leading German insurance company, we show you how you can safely and reliably carry out a complex modernisation of your applications in parallel to ongoing operation in the mainframe area.

### Slides and Recording

You could not attend? Here you can [request the presentation slides](#) and [watch the recording](#).

Only available in German. If you are interested in an English version, please [contact us](#) directly.





### **3 New:** **ADS on Eclipse Release 8**

ADS on Eclipse is Delta's modern, integrated development environment (IDE) for the efficient development and maintenance of COBOL and PL/I applications written with Delta ADS.



The new ADS on Eclipse Release 8 is available now. It offers improved functionality for the development and maintenance of applications written with Delta ADS.

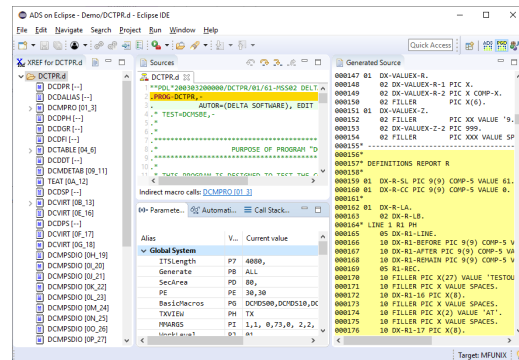
#### **ADS on Eclipse**

ADS on Eclipse supports your development teams with specialised features that enables them to deliver new functionality to your business users faster and with better quality.

- Different perspectives to display the corresponding areas and views in the IDE
- Modern editor with intelligent editing and debugging functions such as automatic syntax check, chroma coding, code completion and templates, outline views, bookmarking, code folding, documentation and much more
- Direct integration of the application generators, so that dependencies and build precedence are checked
- Post-generation debugger for step-by-step tracking and testing of the generating process with direct switching between code editing and debugger.
- And more ...

Working with ADS on Eclipse improves the understanding of Your applications as the generators provide additional information about the application components.

Furthermore, ADS on Eclipse enables the seamless integration of application development with Delta ADS into the entire development process.



#### **New in Release 8 for ADS on Eclipse**

Release 8 is now available for ADS on Eclipse.

It contains numerous innovations.

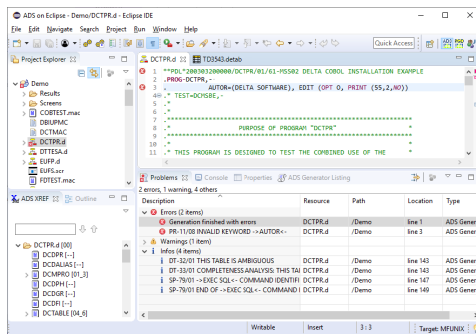
- Configuration and deployment: Improved handling of configuration and deployment of the installations.  
Companies increasingly use central deployment software to automate the provisioning of workstations. This gives them security and simplifies administration and support through uniformly designed work environments.  
ADS on Eclipse Release 8 now help to significantly reduce the administrative effort, especially in larger installations when using central deployment software.
- Eclipse Release 2022-03: With Release 8, ADS on Eclipse now supports Eclipse Release 2022-03, making ADS on Eclipse available for Eclipse



Releases 2019-12 up to and including 2022-03.

- Java 17: With Release 8, ADS on Eclipse now also supports Java 17, making ADS on Eclipse available for Java Long-term Support (LTS) Releases 11 and 17.

For more information, see the release notes for ADS on Eclipse Release 8.



### What else ...

The integrated development system Delta IDS is not only available in the variant ADS on Eclipse, but also for other systems such as Visual Studio, Micro Focus EDz, IBM IDz, LzLabs LzWorkbench.

We will soon provide ADS on Visual Studio for Visual Studio 2022.

### ADS on Eclipse for you

You too can benefit from the power of ADS on Eclipse. Work with the new ADS on Eclipse to provide your business users with new functions faster and with better quality.

We would be pleased to help you, please [get in touch with us](#).



### The Best Environment for Your Application Development

Innovating, implementing better solutions, finding errors faster, getting more value out of what you have:



All this requires a working environment that supports you in your daily work and that you feel comfortable with.

Do you or your teams develop applications with Delta ADS? In COBOL? In PL/I?

We would like to know from you which development environment do you prefer?

Which one do you use and which one would you like?

Thank you for participating in our [quick survey](#).

## 4 Support Information: New Product Versions available

Today we have released new versions of the following products:

- ADS for COBOL & PL/I (6.5.0)
- ADS on Eclipse (8.0.0)
- Generator Engine (6.5.3)
- License Management (3.0.0)



You can find more information about new features and fixes in the release notes at the [support area](#) of our website.

Get information and [updates](#) right now. You'll find the list of our current [product versions](#) here.



## **5 New Delta Training Courses: Register Now**

Anyone using tools to automate software development needs in-depth knowledge of the methods, modes of operation, and capabilities of the tools. And not just “in principle”, but in relation to the concrete environment and task.



Our training courses and workshops help you to use Delta tools efficiently and to optimise the development of your applications: Practice-oriented and taking into account your main areas of interest.

ADS Basics - ADS for Administrators -  
ADS Refresher - ADS on Eclipse -  
ADS What's new

Here you will find the new dates:

- ADS Basics  
03.05.-05.05.2022 and 08.11.-10.11.2022
- ADS for Administrators  
10.05.-12.05.2022 and 15.11.-17.11.2022
- ADS Refresher  
18.05.-19.05.2022 and 23.11.-24.11.2022
- ADS on Eclipse  
01.06.-02.06.2022 and 30.11.-01.12.2022
- ADS What's new  
24.05.2022 and 06.12.2022
- Delta DETAB  
09.06.2022 and 08.12.2022

[Learn more about our trainings and workshops ...](#)

[Contact us](#) to discuss your requirements for a customised training.