Atos

RESEARCH DOCUMENT

AVALON SOLUTIONS

Revision History

Status	Description	Author	Date
Draft 0.1	• Created document structure • First draft of each chapter	Wessel, Mikey van Berlo, Lars van	02-06-2022
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Introduction

Atos is a worldwide digital leader with offices in over 70 countries. Atos is the global leader in secure and decarbonized digital with a range of market-leading digital solutions along with consultancy services, digital security and decarbonization offerings. The company also supports the digital transformation of its clients across various business sectors: Defense, Financial Services, Health, Manufacturing, Media, Energy & Utilities, Public sector, Retail, Telecommunications and Transportation.

Currently Atos presents their demos for SAP to clients using a PowerPoint presentation and a crane wagon made with Lego as a visual aid. The main goal of this project is to find, evaluate and recommend 3D simulation software products, from which a selection is made to be used for developing and visualizing different use cases. For this, some selection criteria have to fulfil such as compatibility with SAP.

The main purpose of this document is to highlight the main and the sub – research questions that were formed by the team. Furthermore, how we used the different DOT Framework methodologies to get to a solution for each. The documents that have been submitted are highlighted in red color indicating that they are a report deliverable.

Management Summary

Atos, an enterprise excelling in the domain of system development and consultancy tasked us with visualizing vital manufacturing process in a 3D simulation software which should be easily able to communicate with their SAP technology. There will be demo components built to showcase the different use cases on the chosen 3D simulation software.

The manufacturing domain can be termed as the foundation for innovations. Once the foundation is strong, the chances to create a product that would benefit largely not only to the company but to its users as well increase. Atos believes that with rapid industrial globalization over the past decades, the need for manufacturers to correspond with growth is the key to prospering and improving their performance. With the goal of achieving 'manufacturing excellence' I.e., improving quality, time and the overall performance, Avalon Solutions will be advising on the state-of-the-art 3D simulation software that would be aid Atos in visualizing their vast manufacturing processes.

Avalon Solutions took the lead by forming building blocks for researching the best 3D simulation software that matched the vision of our clients. The priority is initially focused on working with the discrete manufacturing industry and if the team is able to achieve acceptable results, the scope would also include the process industry.

The team configured and experimented with the different functionalities offered in the FactoryIO software which was suggested by Atos itself. The team was divided into subgroups where the goals of each group were to research the best software that fits the need and secondly, how Atos can implement and use for their future projects.

This document briefly describes the reader to research questions and the methodology chosen for achieving success. With the expertise each of the team members has, Avalon Solutions can strongly suggest that the software which would be advised to Atos will be a complaint of the requirements and would be the solution that would aid in improving their manufacturing sector by visualizing the process in order to mitigate any possible risk that may arise before-handedly.

Research Questions

In this section, we discuss the different research questions and how we approach each one of them by using the different DOT Framework methodologies.

RQ1: What is the technology readiness level of the required 3D software?

Approach

For this research question, the different DOT framework techniques that were used to provide an answer are described below.

Library	Field	Workshop
Literature Study	Available Problem Analysis	Brainstorm
	Requirement Prioritization	
	Interview	

- **Literature Study:** To find suitable candidates for Atos to choose from as 3D simulation tool, we started out by setting up some requirements and exploring some possible products. Understanding the different manufacturing industry I.e., discreet and process.
- **Interview:** Before we set up the requirements, we interview the people from Atos a bit on what they were looking for.
- **Problem Analysis:** For analyzing the problem, we formed current and desired process diagrams (BPMN).
- **Requirement Prioritization:** Also, formulated the user, business, system, non – functional requirements and prioritized them by using the MOSCOW framework.
- **Brainstorm:** Brainstormed the different requirements that would be required in a 3D simulation software.

Results

By following the above approach, the team was able to create two re-usable use case demos (beer brewery and the crane stabilizer) using the Visual Component 3D Simulation software which are parallel to Atos's requirements. Making our solution fit at level 6 at the technology readiness level which are advised in the advice report and implementation document.

RQ2: What are the system requirements?

Approach

To determine the requirements for the demonstrations, we directly approached our contacts from Atos with questions during one of our meetings. They came with a few different cases, or scenarios, for us to create within the 3D simulation tool(s).
Working iteratively, we would regularly show progress on our work. Through their feedback and questions, we would be able to unravel more of the requirements for their demos.

Library	Field	Workshop	Showroom
Available product analysis	Problem Analysis	Brainstorm	Product review
Competitive Analysis	Interview	Requirement Prioritization	
SWOT Analysis	Task Analysis		

- **Available product analysis:** To start with finding suitable candidates for Atos to choose from, we made a starting list of several different 3D manufacturing visualization software. From this list, we would later filter out the best candidates.
- **Competitive Analysis:** To filter out the best possible candidates for Atos to choose from, we created a solution selection matrix and an accompanying document describing the different products.
- **SWOT Analysis:** To get more insight into the strengths and weaknesses of each of the top pick's, we conducted SWOT analyses before recommending any of them.
- **Problem Analysis:** We analyze the problem and the context to make a start with setting up some baseline requirements.
- **Interview:** To get a better understanding of what features, and functionalities Atos wanted, we conducted an interview with them to find out what tasks are involved, who the users will be, etc.
- **Task Analysis:** From the interview, we analyze the task(s) that are involved with creating the demos and from this created use case diagrams. This way we could further refine our list of requirements.
- **Brainstorm:** At the start of setting up the requirements, we brainstormed some ideas of what might be needed.
- **Requirement prioritization:** Through a solution selection matrix, we gave the different requirements a weight to prioritize each more and others less. (e.g., # of moving objects, aesthetically pleasing, detailed animations)
- **Product review:** We presented our findings to Atos and had them give their opinions so we could proceed with determining which we will recommend to them.

Results

Resulting from the collective research mentioned above, we amassed several deliverable documents. These are the software analysis document, the software selection matrix, the GAP and SWOT analyses, the interview reports, and the business case document.

RQ3: How can reusable demo cases that meet the requirements of Atos be developed?

Approach

For this research question, the different DOT framework techniques that were used to provide an answer are described below.

Library	Field	Workshop	Showroom	Lab
Literature Study	Interview	Brainstorm	Product Review	Usability Testing
Expert Interview	Prototyping	Requirements Prioritization	Pitch	A/B Testing
Competitive Analysis	Stakeholder Analysis	IT architecture sketching	Peer Review	Non – functional test
SWOT Analysis	Explore user requirements	GAP Analysis		Hardware Validation
	Document Analysis	Decomposition		

- **Literature Study:** For listing down each of the functional and non- functional requirements, the team conducted literature study to make ourselves familiar with the manufacturing industry. More importantly the software's' requirements that are essential for developing the demos such as the OPC and PLC server.
- **Expert Interview:** Conducted an expert interview with the sales representative of Flexsim and Visual Components. It was done to ask them if the software and non – functional requirements were present and how can they be conducted by using their software.
- **Competitive Analysis:** To test the functionalities of software's Flexsim and Visual Components, completive analysis was conducted.
- **SWOT Analysis:** For competitive analysis, SWOT analysis framework was used for getting an in - depth difference between the two software's.
- **Interview:** For the findings of two software's, we received feedback from our Atos stakeholders in our weekly interview meetings.
- **Prototype:** While testing, there were re-usable demo cases built as a prototype using Flexsim and Visual Components.
- **Explore user requirements:** Formulated user requirements by conducting interviews and asked them in the expert interview.
- **Document Analysis:** Wrote down the KPIs/requirements and ranked them on their availability.
- **Stakeholder Analysis:** Conducted stakeholders' analysis for the advising the departments that will be developing the demos after our project.
- **Brainstorm:** Brainstormed stakeholder analysis, SWOT, competitive, requirements of the demos and Atos stakeholder.
- **Requirement Prioritization:** Prioritized the software's based on the requirements of Atos and the readiness of their availability.
- **IT Architecture Sketching:** For advising and implementing our advised solution at Atos, looked into the IT and Business architecture.
- **GAP Analysis:** Conducted the GAP analysis for not advising the rest of the 3D Simulation software's explored such as AnyLogic and Siemens Technomatrix.

- **Decomposition:** Build UML diagrams for illustrating the user's approach to using our advised software.
- **Product Review:** After building the two use cases, we presented it to Atos and got their review on it.
- **Pitch:** After requirement prioritization, pitched Visual Components as the main advised software for Atos.
- **Peer Review:** Asked for peer review for understanding the IT architecture
- **Usability Testing:** Conducted usability testing of Visual Components and Flexsim for prioritizing them.
- **A/B Testing:** Monitored Flexsim and Visual Components for a period of time while testing out their usability, functionality and demo making time.
- **Non – functional test:** Conducted the non – functional test on Visual Components.
- **Hardware Validation:** Looked into the hardware requirements for both Flexsim and Visual Components while advising.

3D Software Analysis

Visual Components

AnyLogic

By using various research techniques such as the **DOT Framework**, we analyzed the different functionalities of the software and whether Atos should consider implementing Anylogic for building their 3D manufacturing use case demos.

For testing out the software, Atos provided us with two use cases, the **Beer Brewery Case,** and the **Crane stabilizer**. As we started creating the demos, we observed that Anylogic is hard to use software, so we made different demos in the discrete and continuous manufacturing for which there were available tutorials to use. To measure, analyze and advice this software, the methodologies that were practiced are DMAIC (Define, Measure, Analyze, Improve and Control) for understanding the process flow and GAP Analysis for understanding Atos's infrastructure and where/how Anylogic can fit.

Issue	Data	Root Cause	Solutions Experimented	Recommendations
Build re-usable demo components for different use-cases	Case: Job shop simulation	1. Atos has a huge focus on visuals of the demo components . 2. Atos wants to see how the forklifts work and are animated.	1. Explored the animation functionality of the software. 2. Research building a dashboard showing key measures. 3. Looked through the Anylogic online community and had a phone call with their sales employee.	We recommend Atos not to use Anylogic, due to the fact that is very hard to operate with and is time consuming. For a much better look of the use cases, it would be valid to use the other software advised in this document.
	Case: Acid battery charging	1. Focus on making the flow of the process to picturize how a product is built. 2. Show a full demo of the production of a battery – from the start to the end. 3. Show animated version of how a product is built, combining several different materials.	1. The first two versions have been piloted and discussed with Atos. 2. Showcase how to use liquid containers.	The results produced are not sustainable for Atos to use them, so we decided to drop this 3D software.

DMAIC framework

Current State (FROM)	Desired Future State (TO)	GAPS	Remedies
Atos currently uses Lego blocks to visualize its manufacturing industry processes	Atos wants a 3D Simulation Software which presents them with reusable demos	Software needs to be compliant to their KPI list	Select a 3D Simulation Software advised by the team
Anylogic is a well-known simulation software for discreet and continuous manufacturing industry.	Experiment with Anylogic to build the continuous case.	There are no available tutorials for using the liquid containers.	Select a 3D Simulation Software advised by the team
Anylogic can be connected with SAP and have a flow of activities with the different applications and servers used by Atos	Test Anylogic by connecting it with Atos's infrastructure applications	Functionality to connect with SAP is there but Atos cannot master Anylogic in the time frame given.	Select a 3D Simulation Software advised by the team
Anylogic shows a very dated aesthetic visualization for its users.	Advised software should be visually appealing for Atos	Anylogic's current visuals fit with the future needs of Atos, but due to the lack of tutorials it would be hard for them to use it	Select a 3D Simulation Software advised by the team

GAP Analysis

FlexSim

By using various research techniques such as the **DOT Framework**, we analyzed the different functionalities of the software and whether Atos should consider implementing Flexsim for building their 3D manufacturing use case demos.

For testing out the software, Atos provided us with two use cases, the **Beer Brewery Case,** and the **Crane stabilizer**. To measure, analyze and advice this software, the methodologies that were practiced are DMAIC (Define, Measure, Analyze, Improve and Control) for understanding the process flow and GAP Analysis for understanding Atos's infrastructure and where/how Flexsim can fit.

The demos that were built using Flexsim are attached to this document's submission.

Issue	Data	Root Cause	Solutions Experimented	Recommendations
Build re-usable demo components for different use-cases	Beer Brewery Case: The process flow of used by Atos	1. Atos has a huge focus on visuals of the demo components. 2. Atos wants to see the liquid containers animated. 3. Atos wants to tweak their own temperature for different conditions.	1. Researched different websites for downloading more aesthetically appealing 3d components. 2. Explored the animation functionality of the software. 3. Build a dashboard showing key measures. 4. Looked through the Flexsim online community and had a meeting with their sales employee.	We recommend Atos to use Flexsim as a minimal viable product solution for building their demo components fast. For a much better look of the use cases, it would be valid to use the other software advised in this document.
	Crane Stabilizer: Stabilizer components and crane from their SAP	1. Focus on making the flow of the process to picturize Atos's ideas. 2. Finalized to be used as an MVP product.	1. The first two versions have been piloted and discussed with Atos. 2. The MVP demos have been completed to a finalizing stage to showcase at their event.	The results produced are sustainable for Atos to use them currently for their showcase event.

DMAIC framework

Current State (FROM)	Desired Future State (TO)	GAPS	Remedies
Atos currently uses Lego blocks to visualize its manufacturing industry processes	Atos wants a 3D Simulation Software which presents them with reusable demos	Software needs to be compliant to their KPI list	Select a 3D Simulation Software advised by the team
Flexsim is a well-known simulation software for discreet and continuous manufacturing industry.	Experiment with Flexsim to build the beer brewery case.	The liquid containers do not have animations. In order to do that, would require some animation knowledge.	Learn about how to animate objects in Flexsim using their online tutorials.
Flexsim shows only some of the statistical data of the demo components on their dashboard.	Advised software should be able to tweak and measure different parameters for different types of components.	To show the statistical data, one would have to form a specific script for changing statistical values in Flexsim.	Learn about how to write specific scripts for visualizing statistical data.
Flexsim can be connected with SAP and have a flow of activities with the different applications and servers used by Atos	Test Flexsim by connecting it with Atos's infrastructure applications	Functionality to connect with SAP is there but Atos needs to set up the connection	To set up the connection with SAP and measure the difference.
Flexsim shows a very dated aesthetic visualization for its users.	Advised software should be visually appealing for Atos	Flexsim's current visuals does not fit with the future needs of Atos	Research and analyze different 3D Simulation Software. Use Flexsim as their MVP.

GAP Analysis

Plant Simulation by Siemens

	Findings	**Documentation on the internet (tutorials, videos, etc.)**	**Overall user score**
Beer brewery	For the continuous process there are few options, only extremely basic ones. The use of the software also gives some problems, as it is not always easy to connect different components. For the components that are available there are a lot of options to edit, animate and let them perform multiple tasks. This is at first hard to do, and more tutorials would be helpful. The environment also does not look as visually appealing as that some other software's do.	There is not much documentation on the software, there are some tutorials but not that many. The tutorial that can be found are very extensive. There also is a forum but it is not regularly active.	5.5/10
Pencil manufacturing	For the discrete processes there some options to make a process flow visible in a 3d environment. There are few components to use, and it is hard to code them to do specific tasks. It takes a lot of time to make the pencil manufacturing because it is hard to get the knowledge and the result of all the time is very minimum.	There is not much documentation on the software, there are some tutorials but not that many. The tutorial that can be found are very extensive. There also is a forum but it is not regularly active.	5/10

Swot analysis:

The primary objective of the SWOT analysis is to help develop a full awareness of all the factors involved in making the decision between the software packages.

Strengths - Possible to simulate a whole factory - Fine looking visualization - SAP connection	**Weaknesses** - Hard to gain the knowledge - Hard to quickly adjust a demo for a new project Have to invest a lot of time for minimum results.
Opportunities - Strategic partner (Siemens) of Atos - The software developers are from a big company (Siemens). It is good to have a big company to rely on and they probably keep up with the market.	**Threats** - Hard to find tutorials on how to use the software in different situations. - Expensive (12 k)

Business and IT Alignment Implementation

In this chapter, we discuss about the different requirements that are analyzed for explaining how our advised 3D software solution fits into Atos's business and IT needs along with their mission, vision, and goals for the future. The selection of the appropriate frameworks and strategic planning approaches while listing the possible risks are described briefly.

Business Strategy

The business scope is of importance to manage the expectations of the client. A detailed scope will ensure that the client and project group are on the same line.

In Scope	Out of scope
Requirement analysis	Training regarding the usage of simulation software
Package selection	Programming a connection to SAP
Development of reusable demo components	Developing simulation software
Creating end-to-end use cases	Visualizing different manufacturing processes
Research on how to connect to SAP	
Visualize manufacturing processes	
Fits with their company's mission, vision, and goals for future.	

i. **Organizational Scope**

The project will be executed by the team Avalon Solutions and will be delivered exclusively to Atos. For this project there are a total of six people, but the other members of the company will also have access to the project deliverables and can make contributions or review material if required.

ii. **Application Scope**

The application scope means to define which actors can have access to the company's system. For this project, the scope will be the sales department and the customers of Atos. The salespeople will use the demo components to demonstrate how their solution will work for the clients. Additionally, linking the software product to SAP has the highest priority, while establishing a connection with other ERP systems is optional.

iii. **Documentation, Training and Educatio**n

There will be a lot of documentation regarding the execution of the project. First, the team is going to design the project plan which will determine the phases of the project, the exact company requirements, and the final deliverables. Furthermore, additional training for the use of the demo components by the sales team will be required due to the fact that the project team will not be responsible for creating all of them.

Business Governance

For incorporating the business governance, the following framework was used for aligning the mission, vision, and the future goals of Atos with our advised solution.

Organizational Hierarchy

For capturing the entire hierarchy of Atos and its involvement with its different clients, upon research we came across the following diagram which illustrates Atos's organizational hierarchy in brief.

Monitoring and Internal Control

Having advised an implementation document, in order to continue monitoring the progress or issues that arise while testing the Visual Components, following can be an example to have that process in control.

Establish a Foundation	1. Go over the advice and implementation plan advised from Avalon Solutions. 1. Establish the plan for testing Visual Components with other demo cases or build upon the use cases built by the team for further examination of the software. 1. Brainstorm the internal control measures followed in previous projects.
Design & execute	1. Prioritize the risks from the advice report 1. Identify the control measures that can be taken prior to avoid risks 1. Implement monitoring procedures of the software's use cases
Assess & Report	1. After understanding the risks, sort them on their possibility to occur 1. Identifying the KPIs that can be controlled 1. Form a plan for controlling KPIs while testing and implement appropriate monitoring procedures

Transparency and Accountability

For ensuring transparency and accountability for implementation and testing of Visual Components, firstly the involved department and stakeholder shall all be aware of the research, findings and advises that our team has done in the period of time. In case the research yields valuable findings for Atos, they shall discuss it within themselves and the demo engineers who are going to be the sole decision makers of our findings.

Policies and Procedure

For complying with the policy and procedure of the testing Visual Components, the implementation plan describes in detail how to best approach this section.

The adoption process is accelerated about what Atos can do with IOT & SAP. It helps in the implementation phase; online simulations dramatically reduce testing. Sales is an important criterion during design and testing.

Board of Directors and Committees

Although the board of directors and committees come later in the picture, it would be worthwhile for the sales department colleagues to present them how our solution helps them become digital, their customers also.

Legal and Regulatory Framework

For ensuring the legal and regulatory framework for this project, the testing phase should comply Atos's principles as mentioned on their official website.

Distinctive Competencies

Risks

The below risk table illustrates possible project risks using color schemes. The legend is presented in the first table, which uses colors to address the severity of each task.

		Probability		
		Low	Medium	High
Impact	Significant	Substantial management required	Must monitor and manage risks	Extensive management crucial
	Moderate	May accept risks but monitor them	Management effort useful	Management effort required
	Minor	Accept risks	Accept risks but monitor them	Monitor and manage risks

Figure 2 Risk Analysis Legend

Business Risk Table

Risk Type	Risk Probability	Risk impact	Prevention	Solution
Insufficient training and reskilling of end users	Medium – High (It is likely to occur because they will be using this software for creating the demo cases)	High (If they cannot use the software the demo cases will have to be created using the Lego system	Planning a schedule for following workshops and tutorials and consider each task by priority versus implementation time.	Scheduling a personal workshop from Visual Components.

Not give the desired end product	Medium (Most of the demo cases are possible to create)	High (Again the process has to be visualized manually)	Have strict guidelines of what the client can expect	Find compromise and adjust existing features to better suit the demands of client.
Lack of change management	Medium (If they fail to implement the software and cannot connect to SAP	High (Failing to connect to SAP will be a major setback	Establish a clear change management strategy based on our advice	Might be forced to cut functionalities of problem cases
Lack of support from Visual Components	Medium (They normally provide sufficient support)	High (If they are not supported, they will not know how to use the software)	To have monthly meetings to let Atos know if there will be a change in the software	The only feasible solution would be to switch to a different software product
Visual Components changes or removes features of the software	Low (Most of the updates include only adding new features and not remove them	High (Prototype is crucial for client to get a proper overview)	To have monthly meetings to let Atos know if there will be a change in the software	The only feasible solution would be to switch to a different software product

Figure 3 Risk Analysis Table

Organizational Infrastructure

Administrative Structure

Atos acts as a consultancy firm and is providing solutions for third-party customers regarding process automation. They are using the ISA 95 framework which is used for developing an automated interface between enterprise and control systems.

Skills

There are couple of essential skills which are required for the implementation of a software system. They are as follows:

1. Seek holistic data center systems knowledge
1. Look for interoperability expertise
1. Ability to address abstract problems
1. A DevOps mindset and programming skill
1. A checklist of technical knowledge

IT Strategy

Technical Scope

The technical scope will be determined when the simulation software is chosen. In general, the team will be responsible for the development of the reusable demo components using the visualization tool. Additional responsibility of the team is designing the connection between the visualization software and SAP.

Systemic Competencies

For exploring the system I.e., our advised 3D Simulation Software, Visual Component's competency, we have conducted the software testing, planning, design, and execution of the system. This is described in detail in the implementation plan document.

IT Infrastructure

IT Architecture

IT Architecture

In this chapter, we discuss the different types of IT Architecture. IT architecture is a series of principles, guidelines or rules used by an enterprise to direct the process of acquiring, building, modifying, and interfacing IT resources throughout the enterprise.

The IT architecture can be divided into three categories:

Enterprise Architects	• Individuals responsible for the macro business aspects of the technology estate and the associated set of capabilities which service the requirements for the current and future business operating models/states of the organisation.
Solution Architects	• Indiividuals who have a clearer line of sight, as they support specific projects and programmes of work, with responsibility for production, designs, advice and support to projects who deliver a set of desired outcomes and capabilities to support the enterprise.
Technical Architects	• Work on technology platforms and associatedc system enablers on which they deploy, run, manage and support the operational needs of the services required for the business to operate and derive the benefits of the above.

IT Architecture = Solution + Technical Architecture

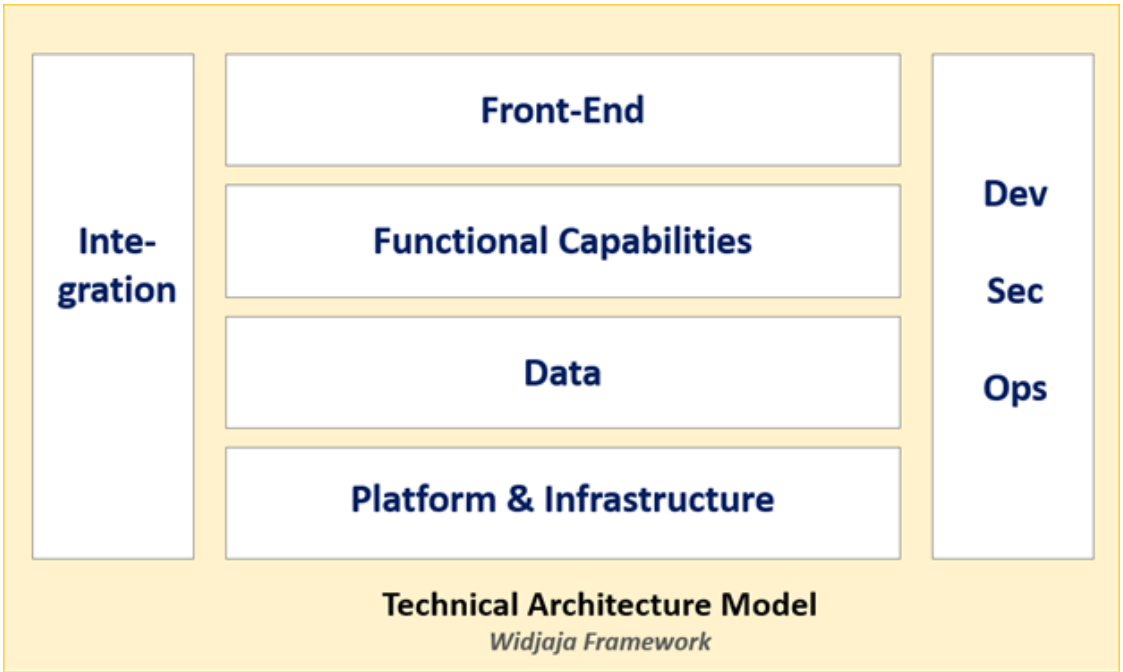
So, IT Architecture is the combination of a high-level functional solution architecture together with the alignment of the Technology Architecture.

Architecture frameworks

In this chapter the IT architecture frameworks which Atos uses will be discussed.

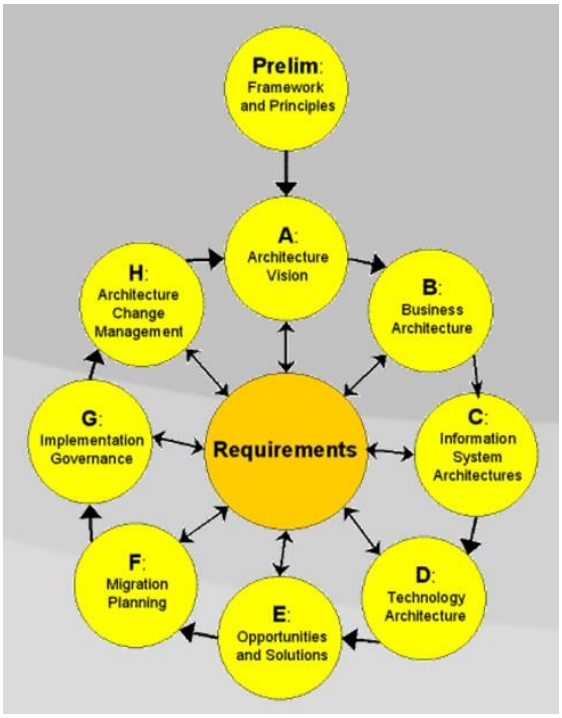
The Widjaja Framework

The Widjaja framework is one of the IT architecture frameworks. It is used for understanding if the solution fits in the company's architecture. Following is an example.



The Open Group Architectural Framework

The **Open Group Architecture Framework** (**TOGAF**) is the most used framework for enterprise architecture. It is used for analyzing, designing, planning, implementing, and governing an enterprise information technology architecture. TOGAF is a high-level approach to design and its divided into four levels: Business, Application, Data, and Technology.



The Zachman Framework

The **Zachman Framework** is a fundamental structure for enterprise architecture which provides a formal and structured way of viewing and defining an enterprise. The framework is divided into: What, How, When, Who, Where, and Why as mentioned below in the diagram.

	Why	How	What	Who	Where	When
Contextual	Goal List	Process List	Material List	Organisational Unit & Role List	Geographical Locations List	Event List
Conceptual	Goal Relationship	Process Model	Entity Relationship Model	Organisational Unit & Role Relationship Model	Locations Model	Event Model
Logical	Rules Diagram	Process Diagram	Data Model Diagram	Role Relationship Diagram	Locations Diagram	Event Diagram
Physical	Rules Specification	Process Function Specification	Data Entity Specification	Role Specification	Location Specification	Event Specification
Detailed	Rules Details	Process Details	Data Details	Role Details	Location Details	Event Details

ANSI/ISA-95

ISA-95 is the international standard for the integration of enterprise and control systems. ISA-95 consists of models and terminology. Its official name is “ANSI/ISA-95 Enterprise-Control System Integration” (known internationally as IEC/ISO 62264). But the standard title does little to provide any information regarding its value. Leveraging this standard can bring a company-wide perspective to system integration that allows you to take thousands of actions and data points and boil them down in an understandable framework. It focuses on activities - and it is meant to define and integrate the activities between business and ERP on the one hand and MES, MOM, and operations management on the other. The standard even covers the detailed level of sensors and the physical processes. These models can be used to determine which information has to be exchanged between systems for sales, finance, and logistics, and systems for production, maintenance, and quality.

Which one is Atos’?

Looking into the different IT architectures we can easily outline which is the Atos current IT architecture – ANSI/ISA-95. This architecture fits with Atos processes and future goals. The IT framework offers the ability to replace parts of the workflow, without interfering with the process.

The 3D simulation software will connect with: SAP and Siemens Teams Center (plm). The IT architecture of Atos differs for project and is based on cloud-solutions. Our project fits in their demo structure. The solution should meet the requirements of the BTIC architecture which is described in the implementation plan document.

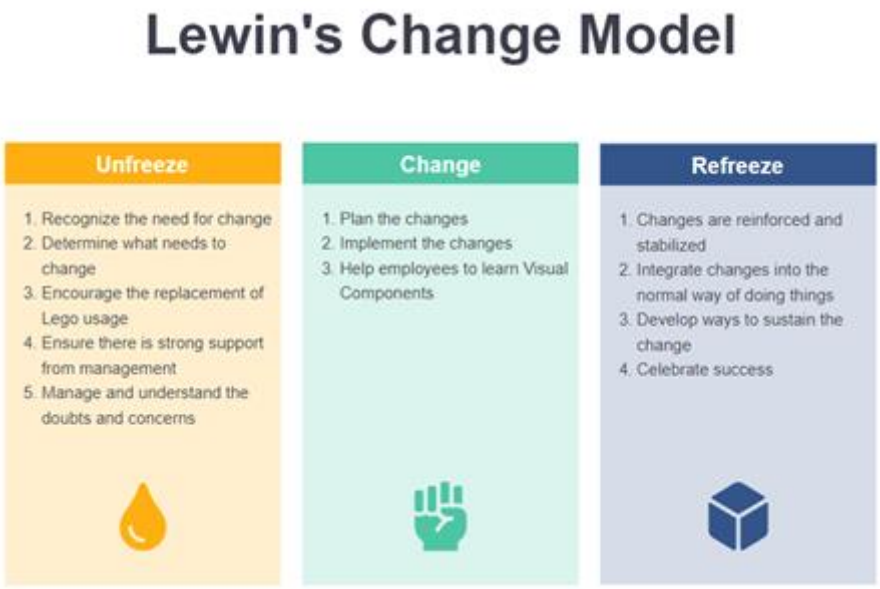
Considering the future of Atos, their IT Architecture expands with hyperscaler by looking at AWS and Microsoft azure cloud systems. This is essential for their customer growth they wish to follow joint growth.

By making a nice presentation, our solution will be helpful. Our solution helps them in their market strategy.

Skills

Change management

The change management is required for motivating and making the departments involved in the change know the reason behind the “why” of the change. For this we used the Lewin’s change model and is described in brief.



Results

As a result, we were able to make some demos that Atos was able to use during a public showcase event, where they garnered a lot of attention from attendees. The resulting products for this research question include:

1. Interview Report
2. Re-usable demo cases using Flexsim and Visual Components
3. Advise Report
4. Requirements Analysis Report
5. Current and Desired Process
6. IT Architecture exploration
7. Business and IT Alignment Research

RQ4: How to implement the software in the company's structure and strategy?

Approach

To get a better idea of how the tool will be implemented into the company, we conducted an interview with questions regarding their business strategy, architecture, and future plans.

Library	Field	Showroom
Best good and bad practices	Interview	Product review
	Domain modelling	
	Document analysis	

- **Best good and bad practices:** To make a start with the implementation plan, we based the approach off what we already knew as well as off of some best practices.
- **Interview:** With another interview we conducted with Atos, we gained more information regarding their business and IT architecture, as well as their system architecture and future plans.
- **Document Analysis:** Atos sent us some documents and information after the interview for us to go through, so we could refine our work on the implementation plan.
- **Domain modelling:** With more information available, we were able to also have diagram of where our solution would be implemented.
- **Product review:** We discussed some of our work related to the implementation plan with Atos, to get their opinions and make sure we were on the right track.

Results

We now know that the tool they decide to go with will be connected to the SAP demo environment within their company, specifically within their BTIC (Business Technology Innovation Center) technology labs. As a result, we have created an implantation plan where we describe how such a software would/could be implemented within their company.

Main Research Question: Which 3D Factory visualization software best suits the needs of Atos & how to implement it?

By researching and providing answers to each of the sub – research question mentioned above, it is safe to say that Avalon Solution advises Visual Components as the main 3D factory visualization software. By documenting the requirements mentioned in the **requirement analysis document** and writing an **advice report**, the team advises Atos to implement by following the **implementation plan**.

Conclusion

To conclude, Visual Components may be the most suitable 3D factory/manufacturing visualization tool available for Atos's goals. It excels above other candidates thanks to its graphical features as well as its relative ease of use. This will allow for a fairly straightforward and simple implementation and rapid deployment once they have adopted the tool.