

# Discrete 3D surfaces of revolution

## Final presentation

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# Outline

- 1 Introduction
- 2 Work achieved
- 3 Project management
- 4 Conclusion

## 1 Introduction

- Collaborators and clients
- Roles
- Context
- Objectives

## 2 Work achieved

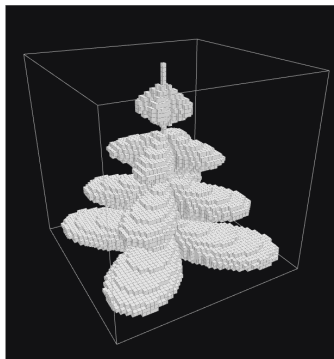
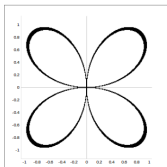
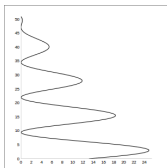
## 3 Project management

## 4 Conclusion

- Clients :
  - Éric ANDRES (Professor and former director of XLIM-SIC department)
  - Gaëlle LARGETEAU-SKAPIN (University lecturer, Discrete geometry)
- Exemple of final user :
  - Aurélie MOURIER (Artist)
- Pedagogic Supervisor :
  - Philippe MESEURE (Professor, Computer Graphics)

- Team composition :
  - Thomas BENOIST - Project manager
  - Zied BEN OTHMANE - Quality manager
  - Adrien BISUTTI - Risks manager
  - Lydie RICHAUME - Tasks manager

- Éric ANDRES and Gaëlle LARGETEAU-SKAPIN developed a new algorithm to model discrete surfaces of revolution.
- Display the result with Mathematica



- Need of a tool usable by everyone and everywhere

- Surfaces visualization tool
  - 3D, slices visualization
  - Choose the generatrix and directrix
  - Export the results
- Algorithm to generate surfaces of revolution
  - Provided by the customers
  - Possible evolution of the algorithm

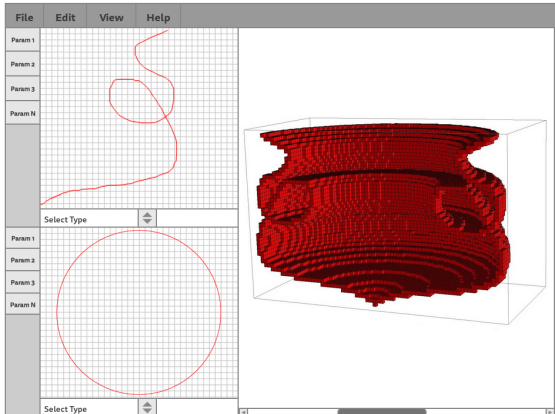
# Outline

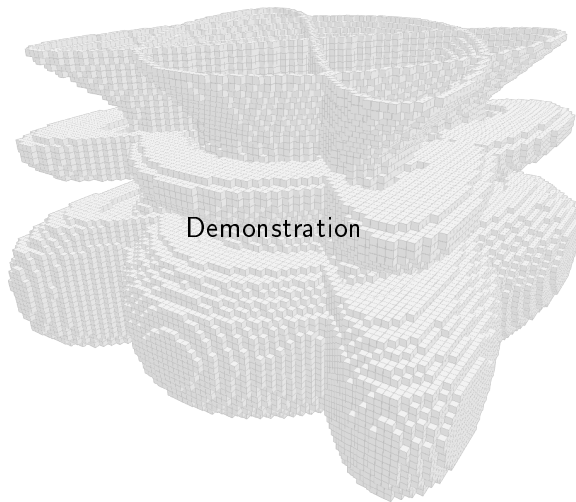
- 1 Introduction
- 2 Work achieved
  - Prototype
  - Demonstration
- 3 Project management
- 4 Conclusion



# Prototype

- Listes des fonctionnalités
- Étude et transcription de l'algorithme
- Documentation technique
- Prototype





# Outline

## 1 Introduction

## 2 Work achieved

## 3 Project management

- Gantt diagram
- Progress
- Deliverables
- Risk evolution
- Quality insurance plan
- Costs

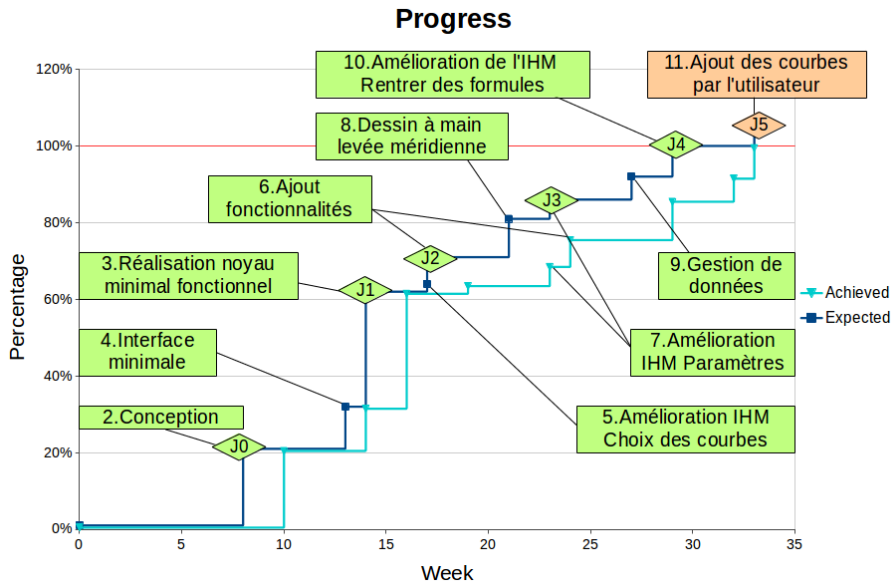
## 4 Conclusion

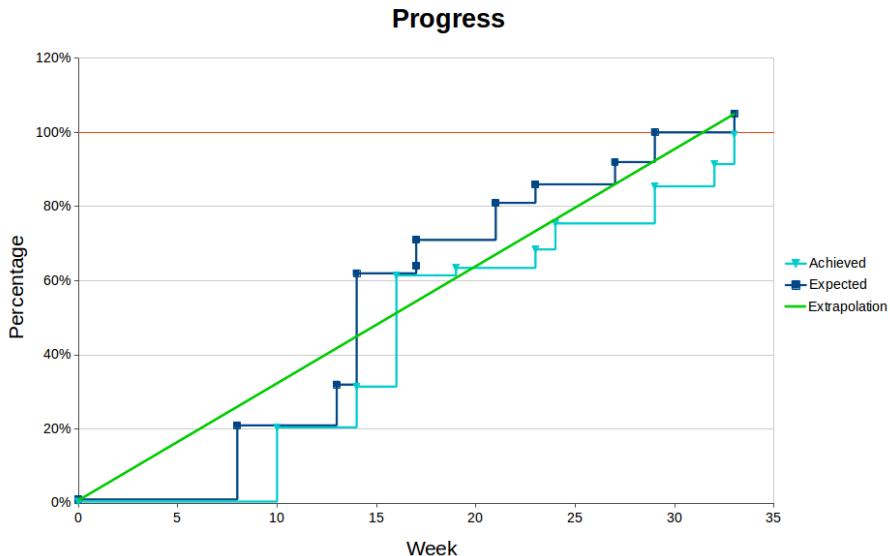
Diagramme prévisionnel

Diagramme réalisé

Diagramme prévisionnel

Diagramme réalisé





N°	Deliverable	Planned date	Actual date
1	Interface and algorithm result	Dec. 23 <sup>rd</sup>	Jan. 18 <sup>th</sup>
2	Minimal application	Jan. 21 <sup>st</sup>	Jan. 25 <sup>th</sup>
2 <sup>bis</sup>	Multicoupe et paramètres	—	Jan. 29 <sup>th</sup>
3	Free hand drawing and curves with editable parameters	Jan. 29 <sup>th</sup>	Feb. 24 <sup>th</sup>
4	Equations and export	Feb. 19 <sup>th</sup>	Feb. 24 <sup>th</sup>
5	Final application	Mar. 2 <sup>nd</sup>	Mar. 2 <sup>nd</sup>
5 <sup>bis</sup>	Final documentation	Mar. 11 <sup>th</sup>	Mar. 14 <sup>th</sup>



# Risk evolution

- Server linked problems

Gravity	0	1	2	3
Delay	●			
Costs	●			
Receipts	●			
Performance	●			
Other				
<b>Global</b>	●			

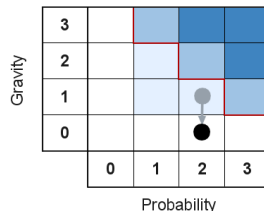
Gravity	3				
	2				
	1				
	0	●			
		0	1	2	3
		Probability			

Level	Gravity	Probability	Criticity
0	None	< 1%	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	> 20%	

# Risk evolution

- New clients

Gravity	0	1	2	3
Delay	● ← ●			
Costs	●			
Receipts	●			
Performance	● ← ●			
Other				
<b>Global</b>	● ← ●			

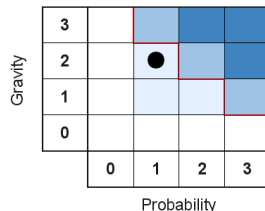


Level	Gravity	Probability	Criticity
0	None	< 1%	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	> 20%	

# Risk evolution

- Evolution of the generation algorithm

Gravity	0	1	2	3
Delay	●			
Costs	●			
Receipts	●			
Performance			●	
Other				
<b>Global</b>			●	

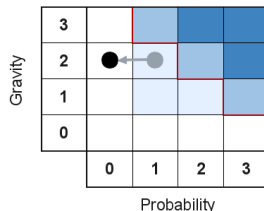


Level	Gravity	Probability	Criticity
0	None	$< 1\%$	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	$> 20\%$	

# Risk evolution

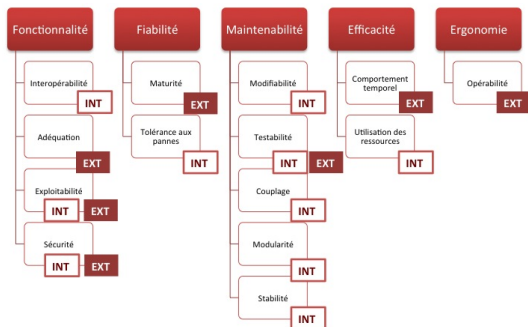
- Slow rendering

Gravity	0	1	2	3
Delay			●	
Costs	●			
Receipts	●			
Performance			●	
Other				
<b>Global</b>			●	



Level	Gravity	Probability	Criticity
0	None	$< 1\%$	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	$> 20\%$	

# Quality insurance plan



## Why ISO-9126 ?

- International standard for the evaluation of software quality.
- Given a quality note according to different criteria.
- Validation of the application by the clients and the quality manager.
- Externals and internals tests.

# Software quality measurement

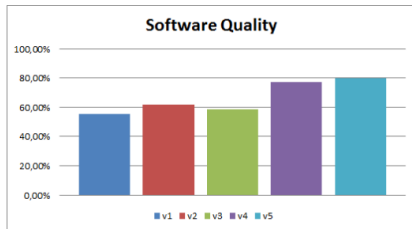
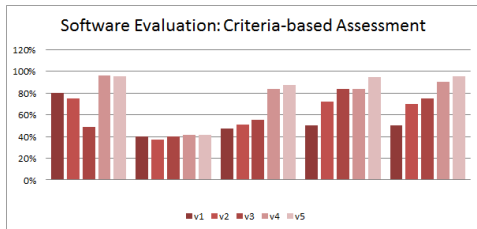
1	Question	Version 1	Version 2	Version 3	Version 4	Version 5
1	Overall vision	1	1	0.5	1	1
2	The ease to find the information	0.5	0.5	0.5	0.5	1
3	Response speed	0.5	0.5	0.5	1	1
4	Utility of the information	0	0.5	0.5	1	1
5	The choice of title and heading and their meanings	0.5	1	1	1	1
6	The completeness of the information found against the need	1	0.5	1	1	1
7	Rapidité d'exécution	0	0.5	1	1	1
8	Errors rate	0.5	0.5	0.5	1	1
9	Handling the use	1	1	1	0.5	0.5
10	The reliability of the application	0	1	1	1	1
	Total	50%	70%	75%	90%	95%

## Standard divisions

- ① Quality model
- ② External metrics
- ③ Internal metrics
- ④ Quality in use metrics

1	Functionality	Level 1		Level 2		Level 3		Level 4		Level 5	
		INT	EXT	INT	EXT	INT	Ext	INT	Ext	INT	Ext
1	Interoperability										
Goal	Ability to interact with one or more systems										
Question	Is the application uses norms and technical standards?										
	Evaluation	90%		75%		85%		100%		95.83%	
1	Adequacy										
Goal	Checking the adequacy of spots against the needs										
Question	Does each function is adequate to the customer need?										
	Evaluation		100%		80%		25%		85%		90%
0.3	Operability										
Goal	The ability to properly use the software system										
Question	At what level the software is usable?										
	Evaluation	25 %	25 %		32.14%	35.71%	35.71%		100%		100%
	Note I/E	76.66 %	83.33%	75%	74.76%	60.35%	30.35%	100%	92.5%	95.83%	95%
	Fonctionnalité	79.99 %		74.88 %		45.35 %		96.25%		95.41%	

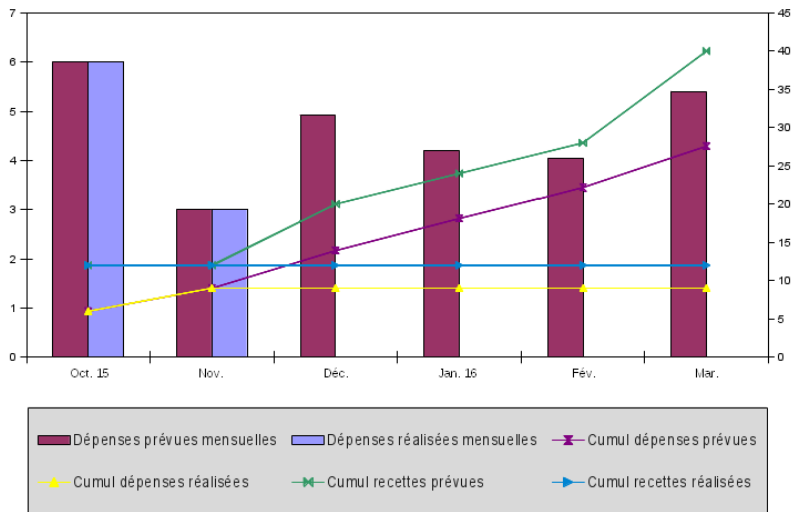
# Software quality evaluation



## Q.I.P Reviews

- 1 Such techniques to analyze the quality during the requirements phases.
- 2 Well-differentiated characteristics of software quality has been developed.
- 3 A large number of software quality-evaluation metrics have been defined.
- 4 Quality can lead to significant savings in software life-cycle costs.

## Évolution des dépenses et des recettes (k€)





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- Technical Javascript improvement (classes, worker, blob, webgl, etc.)
- Partial final delivery
- Perspectives

# Discrete 3D surfaces of revolution

Final presentation

Thanks for your attention.

Are there any questions ?