Discrete 3D surfaces of revolution

Final presentation

Zied Ben Othmane
Thomas Benoist
Adrien Bisutti
Lydie Richaume

University of Poitiers

March 2nd, 2016

Outline

Outline

Collaborators and clients

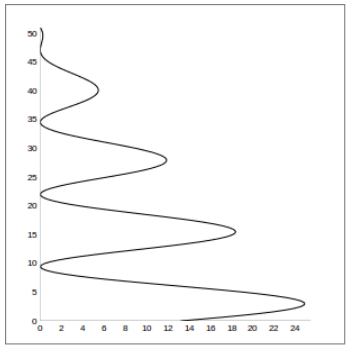
- Clients :
  - Éric ANDRES (Professor and former director of XLIM-SIC department)
  - Gaëlle LARGETEAU-SKAPIN (University lecturer, Discrete geometry)
- Exemple of final user :
  - Aurélie MOURIER (Artist)
- Pedagogic Supervisor :
  - Philippe MESEURE (Professor, Computer Graphics)

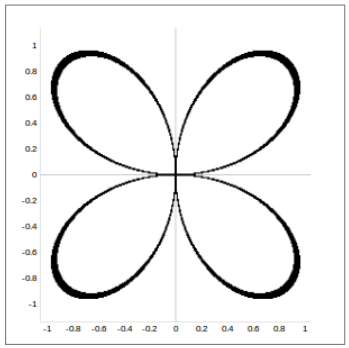
Roles

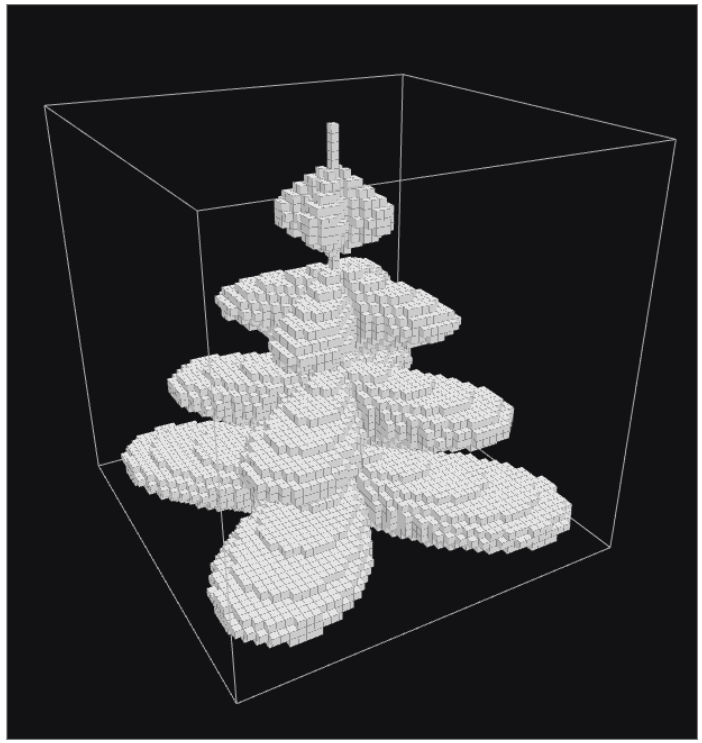
- Team composition :
  - Thomas BENOIST - Project manager
  - Zied BEN OTHMANE - Quality manager
  - Adrien BISUTTI - Risks manager
  - Lydie RICHAUME - Tasks manager

Context

- 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

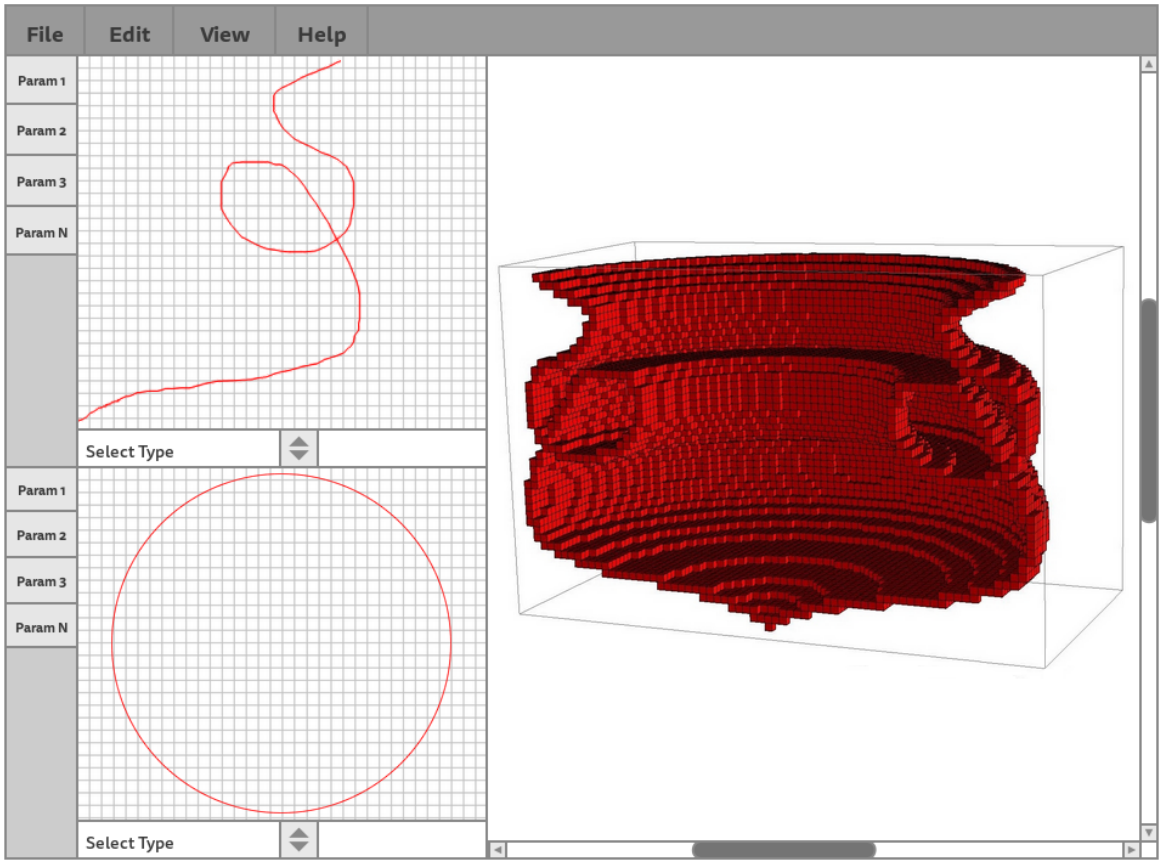
Objectives

- 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

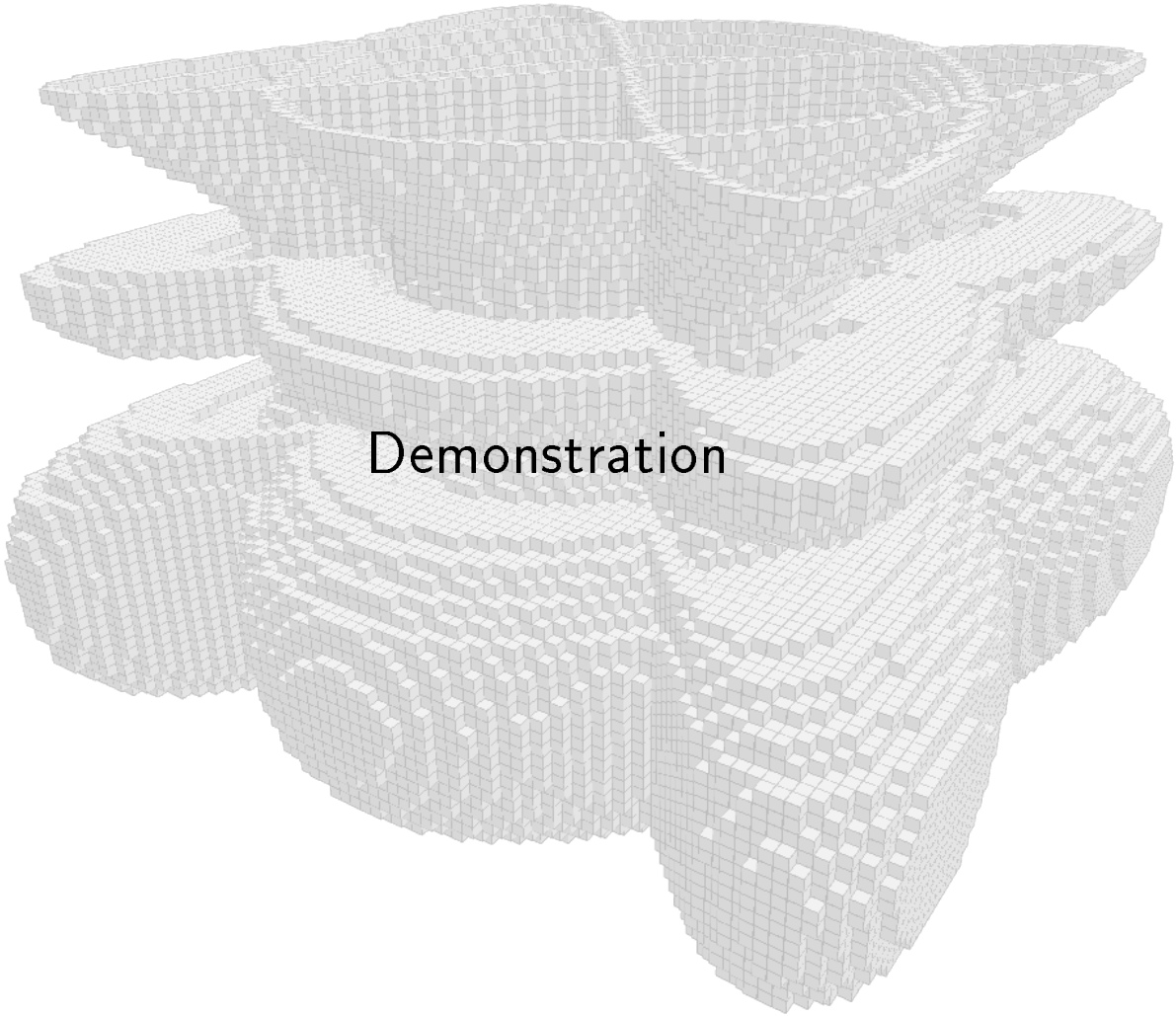
Outline

Prototype

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



Demonstration



Outline

Gantt diagram

Diagramme prévisionnel

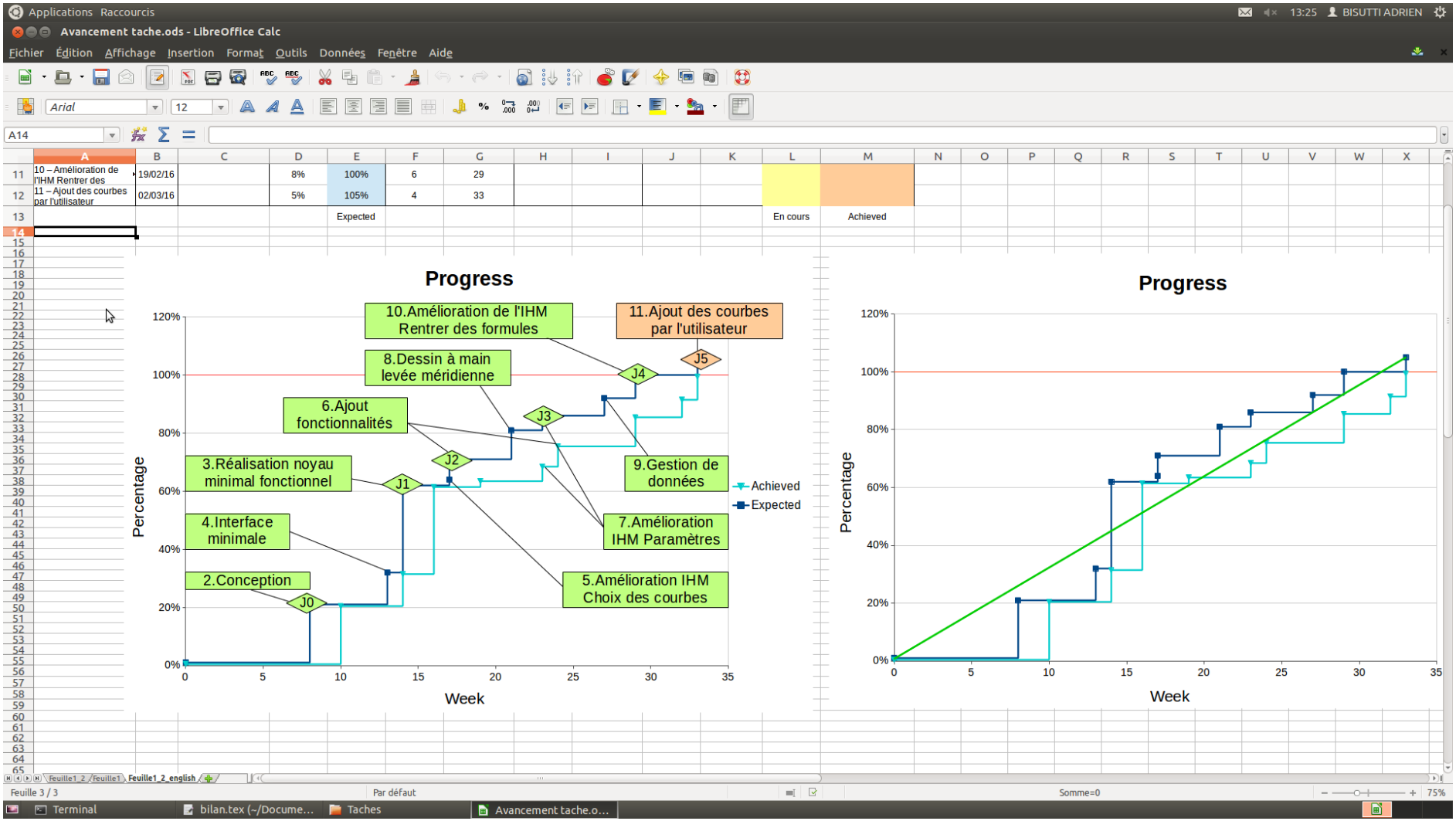
Diagramme réalisé

Zoom

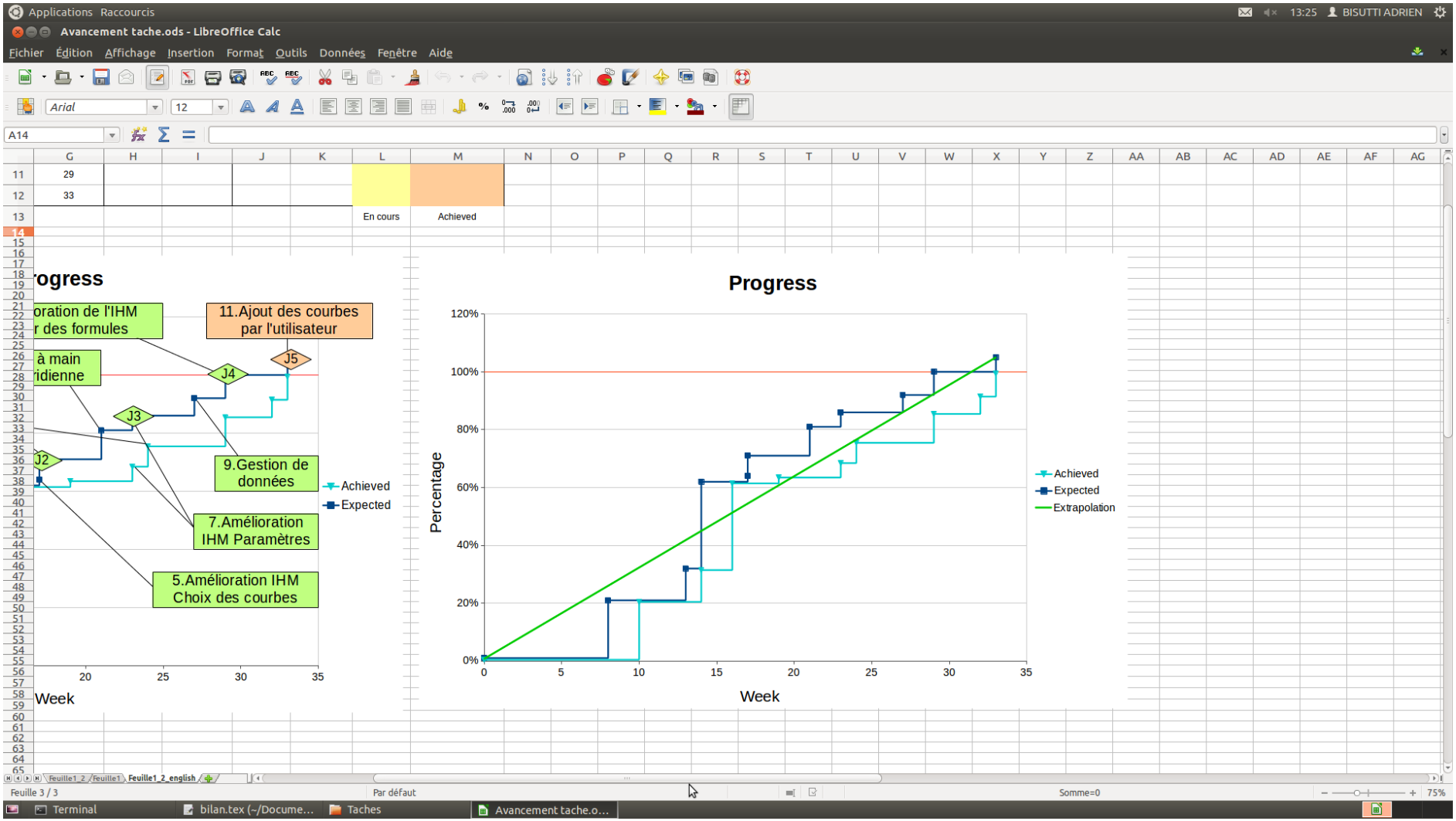
Diagramme prévisionnel

Diagramme réalisé

Progress


Applications Raccourcis
13:25 BISTUTTI ADRIEN
Avancement tache.ods - LibreOffice Calc
Fichier Édition Affichage Insertion Format Outils Données Fenêtre Aide
10 – Amélioration de l'IHM Rentrer des
19/02/16
8%
100%
6
29
11 – Ajout des courbes par l'utilisateur
02/03/16
5%
105%
4
33
Expected
En cours
Achieved
Progress
10.Amélioration de l'IHM Rentrer des formules
11.Ajout des courbes par l'utilisateur
8.Dessin à main levée méridienne
6.Ajout fonctionnalités
3.Réalisation noyau minimal fonctionnel
9.Gestion de données
4.Interface minimale
7.Amélioration IHM Paramètres
2.Conception
5.Amélioration IHM Choix des courbes
J0
J1
J2
J3
J4
J5
Achieved
Expected
Percentage
Week
Progress
Percentage
Week
Feuille 3 / 3
Par défaut
Somme=0
75%
Terminal
bilan.tex (~/Docume...
Taches
Avancement tache.o...

Progress


Applications Raccourcis
13:25 BISUTTI ADRIEN
Avancement tache.ods - LibreOffice Calc
Fichier Édition Affichage Insertion Format Outils Données Fenêtre Aide
Arial
12
A14
En cours
Achieved
29
33
ogress
oration de l'IHM
r des formules
à main
idienne
11.Ajout des courbes
par l'utilisateur
J5
J4
J3
J2
9.Gestion de
données
7.Amélioration
IHM Paramètres
5.Amélioration IHM
Choix des courbes
Achieved
Expected
20
25
30
35
Week
Progress
120%
100%
80%
60%
40%
20%
0%
Percentage
0
5
10
15
20
25
30
35
Week
Achieved
Expected
Extrapolation
Feuille1_2
Feuille1
Feuille1_2_english
Feuille 3 / 3
Par défaut
Somme=0
75%
Terminal
bilan.tex (~/Docume...
Taches
Avancement tache.o...

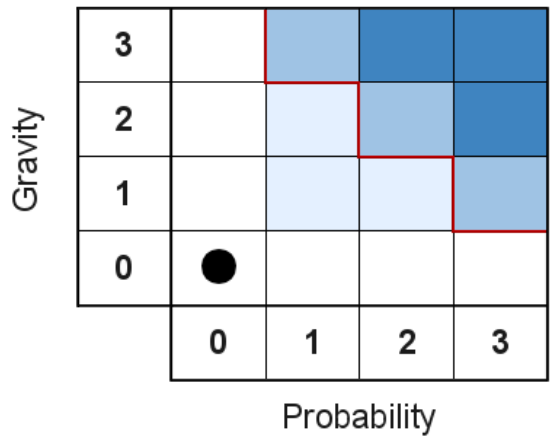
Deliverables

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

Risk evolution

- Server linked problems

Gravity	0	1	2	3
Delay	●			
Costs	●			
Receipts	●			
Performance	●			
Other				
Global	●			

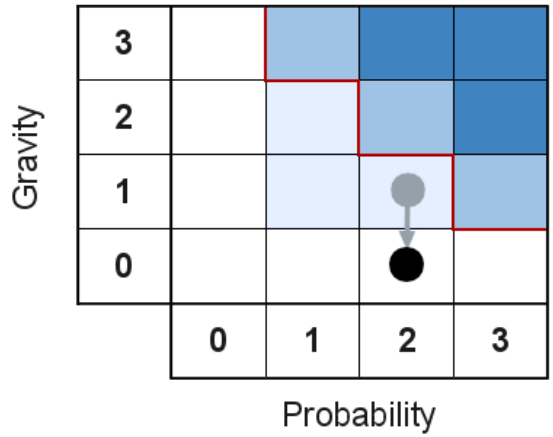


Level	Gravity	Probability	Criticity
0	None	$< 1\%$	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	$> 20\%$	

Risk evolution

- New clients

Gravity	0	1	2	3
Delay	●	●		
Costs	●			
Receipts	●			
Performance	●	●		
Other				
Global	●	●		

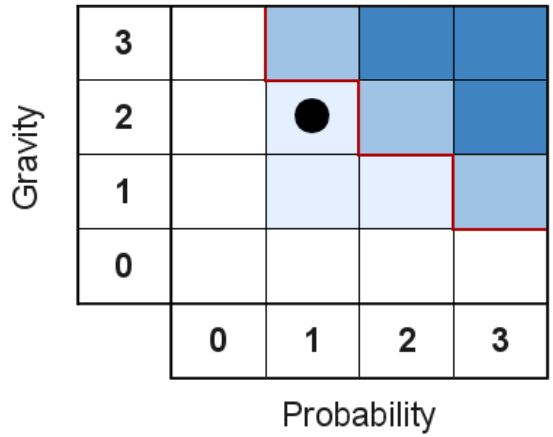


Level	Gravity	Probability	Criticity
0	None	$< 1\%$	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	$> 20\%$	

Risk evolution

- Evolution of the generation algorithm

Gravity	0	1	2	3
Delay	●			
Costs	●			
Receipts	●			
Performance			●	
Other				
Global			●	

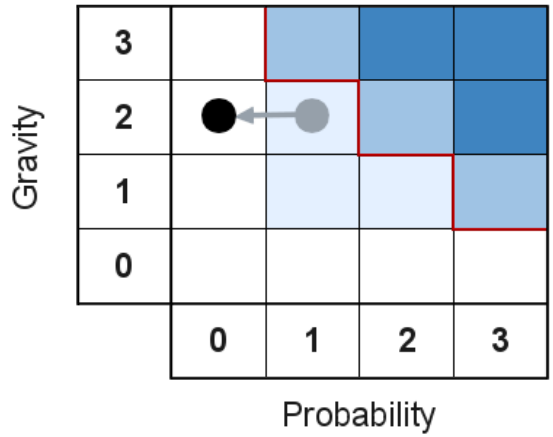


Level	Gravity	Probability	Criticity
0	None	$< 1\%$	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	$> 20\%$	

Risk evolution

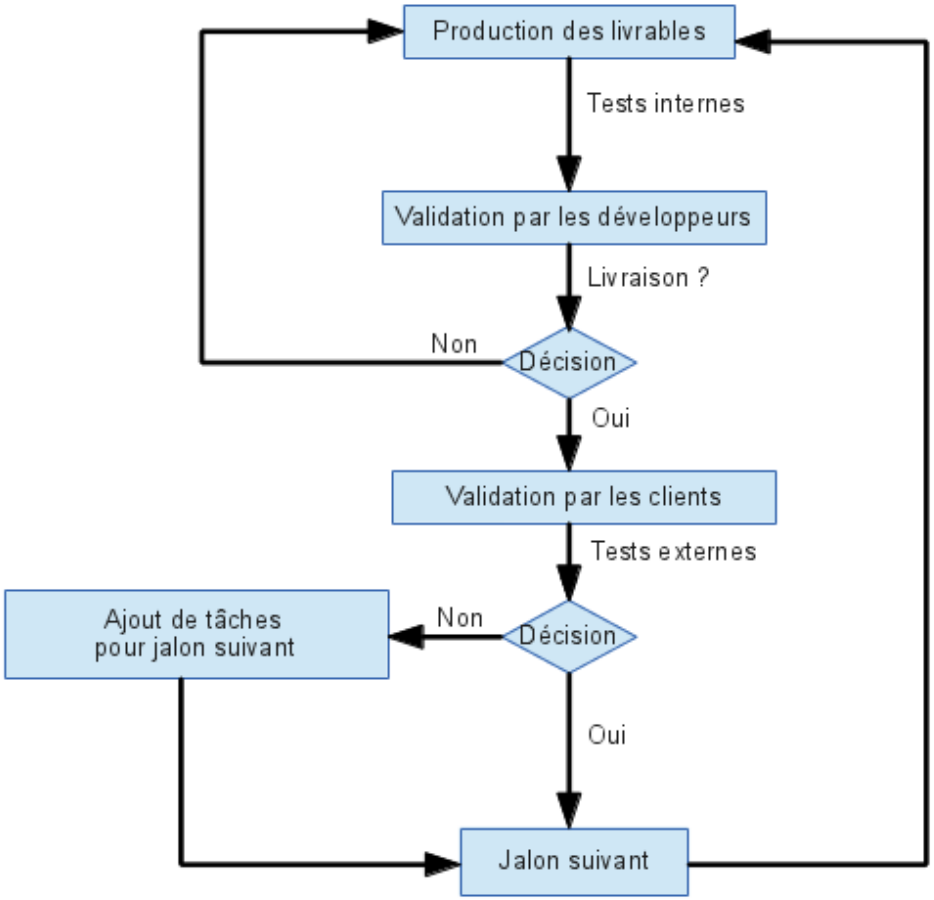
- Slow rendering

Gravity	0	1	2	3
Delay			●	
Costs	●			
Receipts	●			
Performance			●	
Other				
Global			●	



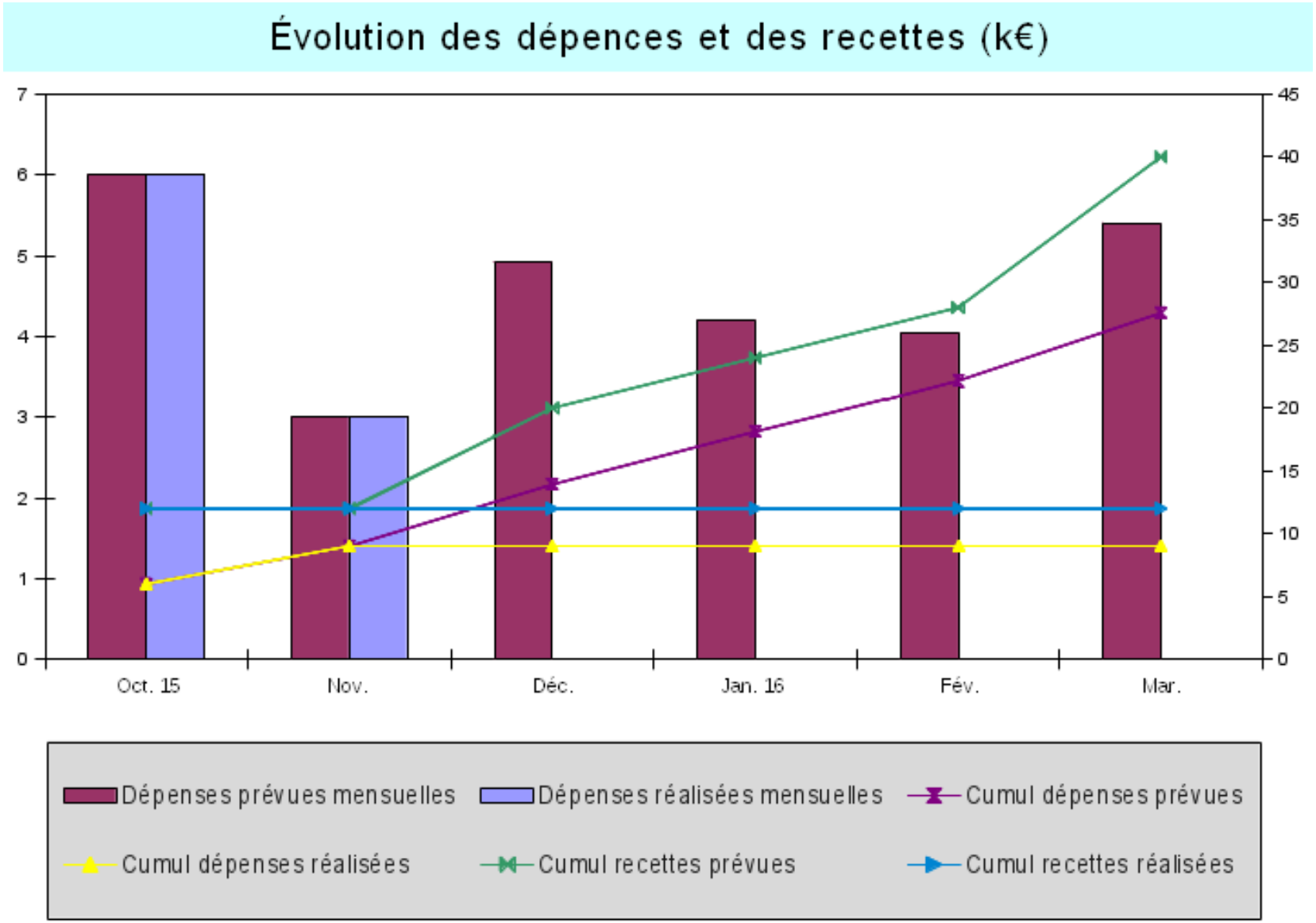
Level	Gravity	Probability	Criticity
0	None	$< 1\%$	No critical
1	Low (marges)	de 1% à 5%	
2	Important	de 5% à 20 %	Critical
3	Dangerous	$> 20\%$	

Quality insurance plan



Milestones validation with the clients

Costs


Évolution des dépences et des recettes (k€)
0
1
2
3
4
5
6
7
0
5
10
15
20
25
30
35
40
45
Oct. 15
Nov.
Déc.
Jan. 16
Fév.
Mar.
Dépenses prévues mensuelles
Dépenses réalisées mensuelles
Cumul dépenses prévues
Cumul dépenses réalisées
Cumul recettes prévues
Cumul recettes réalisées

Outline

Conclusion

- 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 ?