

# AMÉLIORATION DE PROCESSUS

## Maitrise des domaines de pratique

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Luc LAVOIE  
Département d'informatique  
Faculté des sciences



Luc.Lavoie@USherbrooke.ca  
<http://info.usherbrooke.ca/llavoie>

# CADRES DE RÉFÉRENCE

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## Génériques

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- PSP
- TSP
- CMM
- CMMI
- SPICE

## Spécifiques

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- PMMI
- TPI

# CMM (1993)

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## Concepts (Concepts)

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- Process Area
  - Capability
- Assignment
  - Capability Level
- Target Profile
  - Maturity Level

## Levels (Niveaux)

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- 0 (Not evaluated)
- 1 (Initial)
- 2 (Repeatable)
- 3 (Defined)
- 4 (Managed)
- 5 (Optimized)

## STRUCTURE CMM

Name	Abbr	ML	CL1	CL2	CL3	CL4	CL5
Requirements Management	REQM	2	Target Profile 2				
Measurement and Analysis	MA	2					
Project Monitoring and Control	PMC	2					
Project Planning	PP	2					
Process and Product Quality Assurance	PPQA	2					
Supplier Agreement Management	SAM	2					
Configuration Management	CM	2					
Decision Analysis and Resolution	DAR	3	Target Profile 3				
Product Integration	PI	3					
Requirements Development	RD	3					
Technical Solution	TS	3					
Validation	VAL	3					
Verification	VER	3					
Organizational Process Definition	OPD	3					
Organizational Process Focus	OPF	3					
Integrated Project Management	IPM	3					
Risk Management	RSKM	3					
Organizational Training	OT	3					
Organizational Process Performance	OPP	4	Target Profile 4				
Quantitative Project Management	QPM	4					
Organizational Innovation and Deployment	OID	5	Target Profile 5				
Causal Analysis and Resolution	CAR	5					

# PSP

## 4 NIVEAUX

- PSP0 : référence
- PSP1 : planification individuelle
- PSP2 : gestion de la qualité
- PSP3 : gestion l'amélioration

# PSP

## NIVEAU 0

- Référence  
(baseline process)
  - 0.0
    - pratique courante;
    - mesures élémentaires épisodiques a posteriori (temps, anomalies, etc.)
  - 0.1
    - application d'un standard de programmation;
    - mesures élémentaires systématiques a posteriori (+ taille des produits)
    - améliorations épisodiques (mode réactif)

# PSP

## NIVEAU 1

- Planification individuelle  
(personal planning process)
  - 1.0
    - mesures élémentaires systématiques a priori
    - production systématique de rapports d'essai standardisés
  - 1.1
    - planification des tâches
    - programmation des tâches

# PSP

## NIVEAU 2

- Gestion de la qualité  
(personal quality process)
  - 2.0
    - revue de conception
    - revue de code
  - 2.1
    - revues systématisées en fonction de critères documentés



# PSP

## NIVEAU 3

- Gestion l'amélioration  
(cyclic personal process)
  - 3.0
    - décomposition de la planification en itération
    - application intégrale du PSP à chacune des itérations
    - systématisation des essais de régression

## SYNTHÈSE PSP, TSP, CMM

PSP	TSP	Level / Key Process Area
		<b>5. Optimizing (Continuous process improvement)</b>
X	X	Defect prevention
X	X	Technology change management
X	X	Process change management
		<b>4. Managed (Product &amp; process quality)</b>
X	X	Quantitative process management
X	X	Software quality management
		<b>3. Defined (Engineering process)</b>
X	X	Organization process focus
X	X	Organization process definition
		Training program
X	X	Integrated software management
X	X	Software product engineering
	X	Inter-group coordination
X	X	Peer reviews
		<b>2. Repeatable (Project management)</b>
	X	Requirements management
X	X	Software project planning
X	X	Software project tracking
	X	Software quality assurance
	X	Software configuration management
		Software subcontract management

# DU CMM (1993) VERS LE CMMI (2000)

## Concepts

- Process Area
- Capability
- Assignment
- Maturity Level
- Capability Level
- ~~Target Profile~~
- *Scope*
  - *Development*
  - *Service*
  - *Acquisition*

## Niveaux

- 0 Not evaluated
- 1 Initial
- 2 *Managed* (~~Repeatable~~)
- 3 Defined
- 4 *Quantitatively* Managed
- 5 *Optimizing* (~~Optimized~~)

# STRUCTURE CMMI (1/3)

	Development	Service	Acquisition
Maturity Level 2 - Managed			
AM - Agreement Management			x
ARD - Acquisition Requirements Development			x
CM - Configuration Management	x	x	x
MA - Measurement and Analysis	x	x	x
PMC - Project Monitoring and Control	x		x
PP - Project Planning	x		x
PPQA - Process and Product Quality Assurance	x	x	x
REQM - Requirements Management	x	x	x
SAM - Supplier Agreement Management	x	x	
SD - Service Delivery		x	
SSAD - Solicitation and Supplier Agreement Development			x
WMC - Work Monitoring and Control		x	
WP - Work Planning		x	

# STRUCTURE CMMI (2/3)

	Development	Service	Acquisition
Maturity Level 3 - Defined			
ATM - Acquisition Technical Management			X
AVAL - Acquisition Validation			X
AVER - Acquisition Verification			X
CAM - Capacity and Availability Management		X	
DAR - Decision Analysis and Resolution	X	X	X
IPM - Integrated Project Management	X		X
IRP - Incident Resolution and Prevention		X	
IWM - Integrated Work Management		X	
OPD - Organizational Process Definition	X	X	X
OPF - Organizational Process Focus	X	X	X
OT - Organizational Training	X	X	X
PI - Product Integration	X		
RD - Requirements Development	X		
RSKM - Risk Management	X	X	X
SCON - Service Continuity		X	
SSD - Service System Development		X	
SST - Service System Transition		X	
STSM - Strategic Service Management		X	
TS - Technical Solution	X		
VAL - Validation	X		
VER - Verification	X		

# STRUCTURE CMMI (3/3)

	Development	Service	Acquisition
Maturity Level 4 - Quantitatively Managed			
OPP - Organizational Process Performance	X	X	X
QPM - Quantitative Project Management	X	X	X
Maturity Level 5 - Optimizing			
CAR - Causal Analysis and Resolution	X	X	X
OPM - Organizational Performance Management	X	X	X

# SPICE (ISO 15504)

- Plus large que le seul GL
- En lien avec ISO-9001, ISO-14000, etc.
- En lien avec CMMI (2000)
- En lien avec INCOSE et ITIL
- Évaluation processus par processus
- Évaluation continue (et non périodique comme CMMI)
- Décrit dans ISO 15504

# TPI (*TEST PROCESS IMPROVEMENT*)

## UN MODÈLE SPÉCIFIQUE POUR LES ESSAIS

- Matrice d'évaluation de la maîtrise des domaines de pratique  
(*Test Maturity Matrix*)
  - Domaines de pratique principaux  
(*Key areas*)
  - Niveaux  
(*Levels*)
- Points de contrôle  
(*Checkpoints*)
- Mesures d'amélioration  
(*Improvement suggestions*)



# TPI

## QUELQUES DÉTAILS

- Domaines de pratique — classification
  - L : Cycle de vie
  - T : Techniques
  - I : Infrastructure et outils
  - O : Organisation
- Niveaux
  - Interprétation spécifique à chaque domaine de pratique
    - *Capability level*  
Indicateur de progression (0..13)
    - *Maturity level*  
Cote littérale (A, B, C, D) associée à une valeur de l'indicateur de progression
- Exemple
  - voir fichier TPI\_v100a.xls