# Ontology-based Expert System for a Generic Drug Production of Pharmaceutical Dosage Forms

Software Requirement Specification

By

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# **Document History**

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#### Chapter 1 | Introduction

#### 1.1. Identification

Software Requirement describes the requirement specification of OEGP. The Software Requirement is composed of URS, User requirement description, and SRS. The purpose of this document are making the same understanding of the stakeholder and supporting the future development.

#### 1.2. Acronyms

OEGP Ontology-based Expert System for a Generic Drug Production of Pharmaceutical Dosage

PDPO Pharmaceutical Dosage Form Production Ontology

URS User Requirement SpecificationSRS System Requirement Specification

# Chapter 2 | User Scenario and User Characteristic

#### 2.1 User Scenario

The client want to use the OEGP on the tablet computer. The client need login before using the program. The program should show the current user after the user login to the system. The first page of program should be menu which consists of the history, evaluate case, manage a case and calculate drug reformulation as a generic version. The client need 3 types of the user. The first one is general pharmacists. The general pharmacists can register as member by sending the request to the administrator. The general pharmacist can use the system for evaluation and calculate drug reformulation. They also view their drug reformulate history. The drug reformulate history can search by drug's name and date. The second type of user is an administrator. The administrator can manage the member, drug formulation cases and substance in the program. They can approve the member register and change authorize status of member. They can change member status from general pharmacist to an expert pharmacist or the expert pharmacist to the general pharmacist. The administrator also add a new case in the program, update the existing case in the system and delete a case. The last user is expert pharmacists. The expert pharmacists come from general pharmacists. The expert pharmacist cannot register by themselves. This user must change by administrator. The expert pharmacists can use the program similar with the administrator but the expert pharmacists cannot manage make the member management.

#### 2.2 User Characteristic

- General Pharmacists The general pharmacist can use system for making drug reformulation to the generic version. They also see the reformulation history and evaluate the system.
- Expert Pharmacists The expert pharmacists can make an activity with the system like the general pharmacists, but the expert pharmacists can manage the pharmaceutical ontology such as manage substance property, substance, excipient, and tablet formulation.
- Administrator- The administrator can make the activities like the general pharmacists and the expert pharmacists, but the administrator can manage the user account.

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From this User scenario and User Characteristic above, it can divide into use case diagram. The diagram is illustrated in Figure 1.

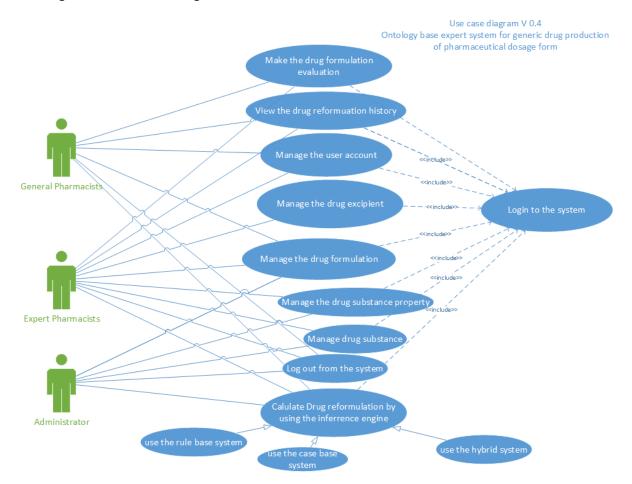


Figure 1: The use case diagram

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# Chapter 3 | Requirement Specification

#### 3.1. Functional Requirement

# 3.1.1. User Requirement Specification (URS)

From the use case diagram at the figure 1, there are 10 sub-features in the OEGP. The sub-feature can divide into the User Requirement Specification. The User Requirement Specification (URS) is illustrated on the table.

No	Use case	URS No.	URS Name	Actor
1	Manage the user	URS-01	The user registers as a member.	General Pharmacists
	account	URS-02	The user updates their	General Pharmacists,
			information.	Expert Pharmacists,
				Administrator
		URS-03	The Administrator deletes the	
			member account.	
		URS-04	The Administrator approves a	Administrator
			general pharmacist registration.	
		URS-05	The Administrator changes an	
			authorized person status.	
2	Calculate the drug	URS-06	The user calculates a drug	General Pharmacists,
	reformulation by		reformulation by using an	Expert Pharmacists,
	using the inference		inference engine.	Administrator
	engine.			
3	View the drug	URS-07	The user views their drug	General Pharmacists,
	reformulation		reformulation history.	Expert Pharmacists,
	history			Administrator
4	Make the drug	URS-08	The user makes the drug	General Pharmacists,
	reformulation		reformulation evaluation.	Expert Pharmacists,
	evaluation			Administrator
5	Manage the drug	URS-09	The user adds a new substance	Expert Pharmacists,
	substance property		property into the system.	Administrator
		URS-10	The user updates an existing	
			substance property into the	
			system.	
		URS-11	The user deletes an existing	
			substance property from the	
			system.	
6	Manage the drug	URS-12	The user adds a new substance	Expert Pharmacists,
	substance		into the system.	Administrator
		URS-13	The user updates an existing	
			substance into the system.	
		URS-14	The user deletes an existing	
			substance from the system.	
		URS-15	The user views the substance in	
			the system.	
7	Manage the drug	URS-16	The user adds a new excipient to	Expert Pharmacists,
	excipient		the system.	Administrator
		URS-17	The user updates an existing drug	
			excipient in the system.	

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		URS-18 URS-19	The user delete an existing drug excipient in the system.  The user views all the drug excipient in the system.	
8	Manage the drug formulation	URS-20 URS-21	The user adds a new drug formulation case into the system.  The user updates an existing drug	Expert Pharmacists, Administrator
		URS-22	The user deletes an existing drug formulation case in the system.	
		URS-23	The user views all of the formulation in the system.	
9	Login to the system	URS-24	The user logins to the system.	General Pharmacists, Expert Pharmacists, Administrator
10	Logout from the system	URS-25	The user logouts from the system.	General Pharmacists, Expert Pharmacists, Administrator

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#### 3.1.2. User Requirement Description

#### Use case1: Manage the user account

#### URS-01: The user registers as a member.

User Requirement	URS-01							
Specification ID:								
User Requirement	The user regi	isters as a n	nember.					
Specification Name:								
Create By:	Panupak Wid	haidit	Las	t update by	: Panupa	k Wichaid	it	
Date Created :	April 1, 2014		Last Re	vision Date	: April 12	, 2014		
Actor:	General Phar	macists						
Description:	URS-01 is use	ed, when th	e user w	ants to use	the OEGP at	t the first	time.	
Trigger:	The user sele	cts "Regist	er" to cre	eate a gener	al pharmaci	ist accour	ıt.	
Pre-condition:	N/A							
Post-condition:	• The	system save	es user in	formation in	nto a systen	n.		
	• An a	dministrato	r receive	es a membe	r registratio	n reques	t from the	
	user.	į			•	·		
Input data	Input name	Example			Description	)		
	Email	"member	01@gma	il.com"	The email s	should be	the same	
						il address	that user	
					used.			
	Password "pass01"				The passw	ord of	the user	
						ve a ler	ngth 4-15	
		charact						
	Confirm "pass01"				The password of the user			
	password			should have a length 4-15				
		characters.						
Normal Flow:	1. The	user opens	the regi	stration pag	ge for creat	ing a nev	v member	
	acco							
		•		d password		_		
				bmit symb	ol for sen	ding the	member	
	_	tration to a						
		•		I and passw				
		•		r informatio	•		tratar	
		•		gistration re ne sending	•			
		essful page.		ie seriaing	registration	n to aun	IIIIIStrator	
Alternative Flow:				ow if the w	or inputs o	2222428	d loss than	
Aitemative How.		•		low, if the us n 15 charac	•	password	i less tilali	
				n error mess		naccwor	d loce than	
				than 15 ch	-	passwort	a iess tilali	
						al flow ag	ain	
	2. The user go back to do a step 2 of the normal flow again.							
	• In sta	en 3 of the	normal f	low, if the ι	iser selects	"cancel"	instead of	
		mit."						
	1. The system shows the login page of the program.							
_ OEGP-S	oftware Requirer						0.1==	
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	<ul> <li>In step 3 of the normal flow, if the user selects "reset" instead of "submit."</li> </ul>
	<ol> <li>The system resets the user information for member registration such as email and password.</li> </ol>
Exception:	<ul> <li>In step 4 of the normal flow, if the user inputs a password less than 4 characters or more than 15 characters.</li> <li>The system shows an error message about a password less than 4 characters or more than 15 characters.</li> <li>The user go back to do step 2 of the normal flow again.</li> </ul>
	<ul> <li>In step 4 of the normal flow, if the user inputs a confirm password not equal with the password.</li> <li>The system shows the error message about a confirm password</li> </ul>
	not same as the password.  2. The user go back to do a step 2 of the normal flow again.
	<ul> <li>In step 4 of the normal flow, if the user inputs an email in a wrong format</li> <li>The system shows an error message about the email format is wrong.</li> <li>The user go back to do step 2 of the normal flow again.</li> </ul>
	<ul> <li>In step 4 of the normal flow, if the email is already used</li> <li>The system shows an error message about the email is already used.</li> <li>The user go back to do step 2 of the normal flow again.</li> </ul>
	<ul> <li>In all of step of the normal flow, if the system disconnects from an internet.</li> <li>The system shows an error message about internet disconnection.</li> </ul>
Include:	N/A

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URS 01: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-01	The system provides the Graphic user interface (GUI) which receive email, password
	and confirm password.
SRS-02	The system can check the password format. The password must be 4-15 character.
SRS-03	The system can check the email format. The email must be the email format.
SRS-04	The system can check the confirm password format. The confirm password must be 4-
	15 character and same as password.
SRS-05	The system save the user information to the system.
SRS-06	The system shall send the request of a member registration to an administrator.
SRS-07	The system shall show the successful sending request member registration page.
SRS-08	The system shall display the error message "The password length should be 4-15".
SRS-09	The system shall display the error message "The email format is not correct".
SRS-10	The system shall display the error message "The email is already used"
SRS-11	The system shall display the error message "The confirm password is not same as
	password".
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

# URS-02: The user updates their information.

User Requirement	URS-02						
-	01/3-02						
Specification ID:							
User Requirement	The user upda	tes their i	ntor	mation.			
Specification							
Name:							
Create By:	Panupak Wich	aidit		Last update by:	Panupak Wichaidit		
Date Created :	April 2, 2014			Last Revision Date :	April 12, 2014		
Actor:	General Pharm	General Pharmacists, Expert Pharmacists, Administrator					
Description:	URS-02 is used	URS-02 is used, when the user wants to update their information.					
Trigger:	The user selec	The user selects "update" to update information of the user.					
Pre-condition:	• The us	er must l	og ir	nto the system.			
Post-condition:	• The sy	stem sav	es th	ne user information in	to a system.		
Input data	Input name Example Description						
	Password	"pass02	"	The password of the user should have a length			
				4-15 characters.			
	Confirm	"pass02	"	The password of the user should have a length			
	password			4-15 characters.	_		
Normal Flow:	1. The us	er opens	upd	ating information pag	ge.		
	2. The s	ystem sł	ows	s the existing user	information such as the		
	passw	•		· ·			
	່ 3. The ເ	ıser inpu	ts a	a new password ar	nd confirm password for		
		nation up		•	, in the second		
				onfirm" to update the	information		
				es the password forma			
				•			
	6. The sy	stem save	ะร เก	ne information updati	ng into the system.		

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	7. The system shows updating information successfully page.					
Alternative Flow:	<ul> <li>In step 3 of the normal flow, if user selects "cancel" instead of "confirm"</li> <li>The system shows the main page of the program.</li> </ul>					
Exception:	<ul> <li>In step 4 of the normal flow, if the user inputs a password less than 4 characters or more than 15 characters.</li> <li>The system shows an error message about a password less than 4 characters or more than 15 characters.</li> <li>The user go back to do step 2 of the normal flow again.</li> <li>In step 4 of the normal flow, if the user inputs a confirm password not equal with the password.</li> <li>The system shows the error message about a confirm password not same as the password.</li> <li>The user go back to do a step 2 of the normal flow again.</li> <li>In all of step of the normal flow, if the system disconnects from an internet.</li> <li>The system shows an error message about internet disconnection.</li> </ul>					
Include:	URS-24					

# URS 02: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-13	The system provides the Graphic user interface (GUI) which receive the password and
	confirm password for user information updating.
SRS-02	The system can check the password format. The password must be 4-15 character.
SRS-03	The system can check the confirm password format. The confirm password must be 4-
	15 character and same as password.
SRS-14	The system shall update the user information in the system.
SRS-15	The system shall show the successful sending member updating page.
SRS-08	The system shall display the error message "The password length should be 4-15".
SRS-11	The system shall display the error message "The confirm password is not same as
	password".
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

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#### URS-03: The administrator deletes the member account.

User Requirement	URS-03							
Specification ID:								
User Requirement	The Administrator de	letes the member account.						
Specification								
Name:								
Create By:	Panupak Wichaidit	Last update by :	Panupak Wichaidit					
Date Created :	April 12, 2014	Last Revision Date :	May 20, 2014					
Actor:	Administrator							
Description:	URS-03 is used, when	the administrator wants to	delete the existing user					
	account from the sys	tem.						
Trigger:	The user select "dele	he user select "delete the existing user" for deleting the existing user from						
	the system.							
Pre-condition:	<ul> <li>The administ</li> </ul>	rator must log into the syste	em.					
Post-condition:	The system d	eletes the existing user fron	n the system.					
Input data	Input name	Example	Description					
·	The member email							
		the same as the emai						
			address that user					
		used.						
Normal Flow:	1. The user ope	ns deleting the existing men	nber page.					
	2. The system s	nows the list of member's u	sername from the system.					
	3. The administ	rator chooses the member ι	username from a list of					
	member user	name.						
	4. The administ	rator selects "delete" for de	leting the existing member					
	account from	the system.						
	5. The system s	nows the alert message for	checking the member					
	account dele	ting.						
	6. The administ	rator selects "Yes" for confir	ming to delete the					
	member acco							
	_ ·	eletes the member account	-					
		nows deleting the existing s						
Alternative Flow:	•	ne normal flow, if the user u						
	_	member account by using t						
	instead of sel	ecting the member's email	from the list of member's					
	username.							
		nistrator inputs the membe						
		nistrator selects "searching"	for searching the existing					
		account in the system.						
	3. The system shows the information of the member.							
	<ol><li>The step of this use case is resumed at step 2 of the normal flow.</li></ol>							
	• In the step 6	• In the step 6 of the normal flow, if the user selects "cancel" instead						
	of selecting "	Yes".						
	1. The syste	m shows the main page of t	he program.					
Exception:	In all of step	of the normal flow, if the s	ystem disconnects from an					
	internet.							

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	1.	system onnection	the	error	message	about	internet
Include:	URS-24						

#### URS 03: System requirement specification (SRS)

No	System requirement specification (SRS)			
SRS-16	The system provides the Graphic user interface (GUI) which consists the list member			
	username.			
SRS-17	The system shows the detail of the member account such as member email and			
	register date.			
SRS-18	The system shows the Confirm dialog box (YES/NO option). The confirm dialog is used			
for confirming to delete member account.				
SRS-19	The system deletes the member account from the account that selected by			
	administrator.			
SRS-20	The system shall show the successful member account deleting.			
SRS-21	The system provides a search bar for searching the member account. The search bar			
	uses the member's email for searching.			
SRS-12	The system shall display the error message "The system is disconnect from the			
	internet".			

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URS-04: The administrator approves a general pharmacist registration.

Description						
User Requirement Specification ID:	URS-04					
User Requirement Specification Name:	The administrator approves a general pharmacist registration.					
Create By :	Panupak Wichaidit	Last update by: Pa	anupak Wichaidit			
Date Created :	April 2, 2014		ay 20, 2014			
Actor:	Administrator	1	,			
Description:	URS-04 is used, when t	he administrator wants to ap	prove a member			
	registration that reque pharmacist.	st from a person who wants t	to be the general			
Trigger:	The administrator selection member registration.	cts "approve member registra	ation" to approve a			
Pre-condition:	<ul> <li>The administra</li> </ul>	ator must log into the system.				
	<ul> <li>The administra</li> </ul>	ator must receive a request	of member registration			
	from the gener	ral pharmacists.				
Post-condition:	•	ves information about approv	ing member registration			
	•	into the system.				
	· ·	nds an email to the person v	~			
	· ·	out member registration is su				
	•	nds an email to the person v	•			
		oout member registration				
		This post-condition is used	when the user selects			
	"cancel" in Alte	ernative flow.				
Input data	Input Name	Input Name Example Description				
input data	The member email	"member01@gmail.com"	The email should be			
	The member email	membero1@gman.com	the same as the email			
			address that user			
			used.			
Normal Flow:	The administra	ntor opens the approving mer				
		ows the list of the general pha				
		om the person who wants to				
	pharmacist.	·	-			
	3. The administra	ator chooses the request that	want to approve as the			
	general pharm	acist.				
	4. The administra	ator selects "confirm" to appr	ove the request of			
	member regist	ration.				
		proves the member account t	that selected by the			
	administrator.					
	· ·	nds the member registration s	successful message to			
	the member er					
	·	ows approving member regist				
Alternative Flow:	-	e normal flow, if user select "o	cancel" instead of			
	"confirm"					
	The system cancels the request of member registration.					
		n cancels the request of mem n shows the main page of the	_			

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Exception:	<ul> <li>In all of step of the normal flow, if the system disconnects from an internet</li> <li>The system shows the error message about internet disconnection.</li> </ul>
Include:	URS-15,URS-24

# URS 04: System requirement specification (SRS)

No	System requirement specification (SRS)					
SRS-16	The system provides the Graphic user interface (GUI) which consists the list member					
	username.					
SRS-17	The system shows the detail of the member account such as member email and					
	register date.					
SRS-22	The system approve the member account in the system.					
SRS-23	The system send the member registration successful message to the member email.					
SRS-24	The system shall show the successful member registration approving page.					
SRS-21	The system provides a search bar for searching the member account. The search bar					
	uses the member's email for searching.					
SRS-12	The system shall display the error message "The system is disconnect from the					
	internet".					

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URS-05: The administrator changes an authorized person status.

User Requirement Specification ID:	URS-05					
User Requirement						
Specification						
Name:						
Create By:	Panupak Wichaidit	Last update by :	Panupak Wichaidit			
Date Created :	April 2, 2014	Last Revision Date :	May 20, 2014			
Actor:	Administrator					
Description:	•	the administrator wants to	· ·			
		eneral pharmacist to an ex				
Trigger:		cts "change authorized pe	rson" to change the status			
D	of the members					
Pre-condition:		ator must log into the syste				
	· ·	lust have at least one of	general pharmacist in the			
Post-condition:	system.	ves the changing of author	izad narcan status into a			
Post-condition.	• The system say system.	ves the changing of author	ized person status into a			
	•	nds the email to a nerson v	who has been changed the			
		rson status by administrato				
Input data	Input name	Example	Description			
·	Member email	"member01@gmail.com	•			
			the same as the email			
			address that user			
			used.			
	Authorize status	"expert pharmacist"	The authorize status			
			should be the			
			characters.			
Normal Flow:		ator opens the changing	authorized person status			
	page.	ows the list of member use	ornama from the system			
	•		username for the authorize			
	status changin		disernance for the authorize			
		•	which consist of email and			
		ite and authorize status.				
	5. The administra	ator select "change authori	zed status".			
	6. The system sh	ows alert message for che	cking the authorized status			
	changing.					
	7. The administra	ator selects "confirm" to c	onfirm an authorize status			
	changing.					
	I		atus that selected by the			
	administrator.					
	•		e status successful message			
	to the membe		horized person status is			
	successfully.	shows the changing dut	nonzeu person status is			
	successiuily.					

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Alternative Flow:	<ul> <li>In step 3 of the normal flow, if the user uses search bar for searching the member by member email instead of selecting the member email in the list of member email.</li> <li>The administrator inputs the member email into the search bar.</li> <li>The administrator selects "submit" for searching the member by the email.</li> <li>The system shows the member email.</li> <li>The process of this use case is continuing at step 5 of the normal flow.</li> </ul>
Exception:	In all of step of the normal flow, if the system disconnects from an internet     The system shows the error message about internet disconnection.
Include:	URS-24

# URS 05: System requirement specification (SRS)

No	System requirement specification (SRS)		
SRS-16	The system provides the Graphic user interface (GUI) which consists the list member		
	in the system.		
SRS-17	The system shows the detail of the member account such as member email and		
	register date.		
SRS-25	The system provides the Graphic user interface (GUI) which consist the method of		
authorized person status changing.			
SRS-26	The system update the authorize status to system that selected by the administrator.		
SRS-27	The system send the changing authorized status successful message to the member		
	email.		
SRS-28	The system shall show the successful member registration approving page.		
SRS-21	The system provides a search bar for searching the member account The search bar		
	use the member's email for searching.		
SRS-12	The system shall display the error message "The system is disconnect from the		
	internet".		

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Use case2: Calculate the drug reformulation by using the inference engine.

URS-06: The user calculates a drug reformulation by using an inference engine.

User Requirement	URS-06					
Specification ID:						
User Requirement	The user calculate	s a dr	ug reformula	tion by usir	ng an infer	ence engine.
Specification Name:						
Create By :						
Date Created :	April 2, 2014		Last Revisi		April 2, 2	014
Actor:	General Pharmaci		•			
Description:	URS-06 is used, w				te a drug r	eformulation as a
	generic version by					
Trigger:	The user selects "	Calcula	ate" to calcul	late drug re	formulation	on as a generic
	version.					
Pre-condition:			og into the sy			
Post-condition:	The syster	m save	es the user in	formation	into a syst	em.
Input data	Part	Nam	e	Example		Description
	Active	Nam	е	"Paracet	amol"	The word should
	Pharmaceutical					be the
	ingredient (API)					character.
		Amo	unt of	500.00		The value
		strer	ngth			should be the
						float value.
		Solu	bility	"Sparing	soluble"	The word should
						be the
						character.
		Flow	ability	"Poor"		The word should
						be the
						character.
		Com	patibility	"Good"		The word should
						be the
				//a: 1.1.11		character.
			perature	"Stable"		The word should
		Stab	ility			be the
		N 4 - 1		((C) - l. l. )		character.
			sture	"Stable"		The word should
		Stab	ility			be the
	DE proportios	Tota	l waiaht	620.00		character. The value
	DF properties	Tota	l weight	630.00		should be the
						float number.
		Dicir	itegration	28		The value
		Time	•	20		should be the
		111116				Integer value.
						integer value.

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		Hardness	8.30		The va	lue
		110101				be the
					float n	
		Dissolution	81.31		The va	
		Profile	02.02			be the
		1.0			float n	
	Substances	Substances'	"Micro	ocrystalline		ord should
	Substances	name	cellulo	•	be the	ora siloala
		Hame	Centare	730	charac	tor
Normal Flow:	1. The	user opens the calcu	llate drug re	formulation		ter.
Normal How.		user inputs the Phar	_			
		rmaceutical ingredie				nco
		user selects the eval		•		ilice.
		rmulation.	uation symb	or for calcul	ate urug	
		system shows the m	onu of an in	foranco and	ina Thair	manu
		•		_		
		sist of rule base syste	em, case bas	e reasoning	system a	na nybna
	syst		: : . <b>f</b>	i fu-		of an
		user selects some of		•	m the me	enu or an
		rence engine for mal	-			
		system calculates th	_			
		system shows the re		iude approp	riate	
Alta wasting Flance		nufacturing and subs	tance.			
Alternative Flow:	N/A					
Fycontion	- lo a	ran 2 af tha namaal f	:£ +b			ADI nontin
Exception:		tep 2 of the normal f	iow, ii the us	ser inputs a	name at <i>i</i>	API part in
		rong format.				. f t : .
	1.	The system shows th	ne error mes	sage about	tne name	e format is
	2	wrong.	d a +la a a+ a a ^	) af +b a .a a	and flatter	
	2.	The user go back to	uo tile step 2	2 of the non	iidi iiOW d	agaiii.
	• In st	ep 2 of the normal flo	ow. if the use	er inputs an	Amount c	of strength
		API part in a wrong f				
		The system shows th		sage about A	Amount o	of strength
		format is wrong.				
		The user go back to	do the step 2	of the nor	nal flow a	again.
		J	•			J
	• In s	tep 2 of the normal fl	ow, if the us	er inputs a s	olubility a	at API part
	in a	wrong format.				
	1.	The system shows th	e error mess	age about t	he solubil	lity format
		is wrong.				
	2.	The user go back to	do the step 2	of the nor	mal flow a	again.
	• In s	tep 2 of the normal	flow, if the $\iota$	user inputs a	a flow abi	ility at API
	par	in a wrong format.				
	1.	The system shows	the error m	essage abo	ut the fl	ow ability
		format is wrong.				
	2.	The user go back to	do the step 2	of the nor	mal flow a	again.
	• In s	tep 2 of the normal f	low, if the us	ser inputs a	compatib	ility at API
	par	in a wrong format.				
OEGP-S	Software Require	ement			_	10.470

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- 1. The system shows the error message about the compatibility format is wrong.
- 2. The user go back to do the step 2 of the normal flow again.
- In step 2 of the normal flow, if the user inputs a temperature Stability at API part in a wrong format.
  - 1. The system shows the error message about the temperature Stability format is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 2 of the normal flow, if the user inputs a moisture stability at API part in a wrong format.
  - 1. The system shows the error message about the moisture stability format is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 2 of the normal flow, if the user inputs a Total weight at DF properties part in a wrong format.
  - 1. The system shows the error message about Total weight format is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 2 of the normal flow, if the user inputs a Disintegration Time at DF Properties in a wrong format.
  - 1. The system shows the error message about Disintegration Time format is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 2 of the normal flow, if user inputs a Hardness at DF Properties in the wrong format.
  - 1. The system shows the error message about Hardness format is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 2 of the normal flow, if user inputs Dissolution Profile at DF Properties in the wrong format.
  - 1. The system shows the error message about Dissolution Profile format is wrong.
  - 2. The user go back to the step 2 of the normal flow again.
- In step 2 of the normal flow, if the user inputs an substance name at substance part in the wrong format.
  - 1. The system shows the error message about Total weight format is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In all of step of the normal flow, if the system disconnects from an internet

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	1.	_	system onnection	the	error	message	about	internet
Include:	URS-24							

# URS 06: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-29	The system provides the Graphic user interface (GUI) which receive active
	Pharmaceutical ingredient (API), DF Properties and substance.
SRS-30	The system can check the name format at Pharmaceutical ingredient (API). The name
	format must be a character.
SRS-31	The system can check the amount of strength format at Pharmaceutical ingredient
	(API). The amount of strength format must be a decimal value.
SRS-32	The system can check the solubility format at Pharmaceutical ingredient (API). The
	solubility format must be a character.
SRS-33	The system can check the flow ability format at Pharmaceutical ingredient (API). The
	flow ability format must be a character.
SRS-34	The system can check the compatibility format at Pharmaceutical ingredient (API). The
	Compatibility format must be a character.
SRS-35	The system can check the temperature Stability format at Pharmaceutical ingredient
	(API).The Temperature Stability format must be a character.
SRS-36	The system can check the Moisture Stability format at Pharmaceutical ingredient
	(API).The Moisture Stability format must be a character.
SRS-37	The system can check the total weight at DF property. The total weight must be a float
	value.
SRS-38	The system can check the disintegration time. The disintegration time must be an
	integer value.
SRS-39	The system can check the hardness at DF property. The hardness must be a float
	value.
SRS-40	The system can check the Dissolution Profile at DF property. The Dissolution Profile
	must be a float value.
SRS-41	The system can check the substance name at substance. The substance must be a
	character.
SRS-42	The system provides the inference engine page .the page is included case base
	reasoning system, rule base system and hybrid system.
SRS-43	The system calculates drug reformulation by using the inference engine that the user
	selected.
SRS-44	The system shows the results page that include manufacturing and appropriate
	substance.
SRS-45	The system shall display the error message "The name must be the character".
SRS-46	The system shall display the error message "The solubility must be the character".
SRS-47	The system shall display the error message "The flow ability must be the character".
SRS-48	The system shall display the error message "The compatibility must be the float
	value".
SRS-49	The system shall display the error message "The amount of strength must be the float
	value".
SRS-50	The system shall display the error message "The temperature Stability must be the
	character".

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SRS-51	The system shall display the error message "The Moisture Stability must be the character".
SRS-52	The system shall display the error message "The total weight must be the float value".
SRS-53	The system shall display the error message "The disintegration time must be the integer value".
SRS-54	The system shall display the error message "The hardness must be the float value".
SRS-55	The system shall display the error message "The dissolution profile must be the float value".
SRS-56	The system shall display the error message "The substance name must be the character".
SRS-12	The system shall display the error message "The system is disconnect from the internet".

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URS-07: The user views their drug reformulation history.

#### Description

<u>'</u>						
User Requirement	URS-07					
Specification ID:						
User Requirement	The user views their dru	g reformulation history	/.			
<b>Specification Name:</b>						
Create By:	Panupak Wichaidit	Last update by:	Panupak Wichaidit			
Date Created :	April 2, 2014	Last Revision Date:	April 2, 2014			
Actor:	General Pharmacists, Ex	pert Pharmacists, Adm	inistrator			
Description:	URS-07 is used, when th	e user wants to view th	ne history of a drug			
	reformulation.					
Trigger:	The user selects "view the	ne history" to view the	history of a drug			
	reformulation.	•	<u>-</u>			
Pre-condition:	The user must lo	og into the system.				
Post-condition:	• N/A					
Input date	Input name	Example	Description			
	History date	"22/01/2013"	The date should be the			
			date format.			
Normal Flow:	1. The user opens	the history of a drug re	formulation page.			
	2. The system show	ws a list of a drug refor	mulation history date.			
	3. The user selects	the date of drug refo	rmulation that they want to			
	see detail.					
	4. The system show	ws a detail of the histor	ry that the user selected.			
Alternative Flow:	<ul> <li>In step 3 of the r</li> </ul>	normal flow, if the user	uses search bar for searching			
	the history by da	ate instead of selecting	the history in a list.			
	<ol> <li>The user inp</li> </ol>	outs the date into the so	earch bar.			
	2. The user sel	ects "submit" for searc	hing a history by date.			
	3. The system	shows a list of history.	-			
Exception:	In all of step of	the normal flow, if the	system disconnects from an			
	internet	·				
	1. The system	n shows the error	message about internet			
	disconnection		3			
Include:	URS-24					
	•					

#### URS 07: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-57	The system shows a list of drug reformulation history.
SRS-58	The system provides a search bar for searching the history. The search bar uses the
	date of making drug reformulation for searching.
SRS-59	The system shows the detail of the history. The history detail includes the drug's
	name, date, manufacturing and ingredient.
SRS-12	The system shall display an error message "The system is disconnect from the
	internet."

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# URS-08: The user makes a drug formulation evaluation Description

	1				
User Requirement Specification ID:	URS-08				
User Requirement	The user makess a drug reformulation evaluation.				
Specification Name:	The user ma	css a urug	reioiiii	iiation evaluati	on.
Create By :	Panupak Wid	haidit	La	st update by :	Panupak Wichaidit
Date Created :	April 7, 2014		1	evision Date:	May 28, 2014
Actor:				armacists, Adm	
Description:				real generic dr	te the drug formulation in ug in a lab.
Trigger:	The user sele	cts "Evalua	ate" for r	naking drug ev	aluation.
Pre-condition:	• The	ıser must l	og into t	he system.	
Post-condition:				-	evaluation into the system.
Input data	Input Name	-	ample	Description	,
,	Dissolution F		.31	•	ould be the float number.
	Disintegration				ould be the integer number.
	time				J
	Pharmaceuti	cal 3		The word sho	uld be the integer number.
	equivalence			Ü	
Normal Flow:		user opens	drug for	mulation evalu	ation page.
		-	_		ulation history.
		•		-	m the list of drug
		mulation h	_		S
			•	ail of the histor	ry that the user selected.
					drug formulation
		uation.		J	J
	6. The	user inputs	the Diss	olution profile,	Disintegration time and
		-		-	drug that the user
		uced.	·	_	_
			s "confiri	m" for making o	drug formulation evaluation.
					f the result is good, the
	syste	m will sho	w succes	sful page.	
	9. The	system sho	ws the d	rug formulatio	n evaluation successful
	page				
Alternative Flow:	• In ste	ep 3 of the	normal	low, if the user	uses a search bar for
	sear	ching the h	istory by	date instead o	f selecting the history in a
	list.				
	1.	he user in	puts the	date into the se	earch bar.
	2.	he user se	lects "su	bmit" for searc	hing the drug formulation
		y date.			
				ne drug formul	
		•		case is resume	d at step at step 3 of the
	1	ormal flov	٧.		

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In step 3 of the normal flow, if the user uses search bar for searching the history by drug name instead of selecting the history 1. The user inputs the drug name into the search bar. 2. The user selects "submit" for searching the drug formulation by date. 3. The system shows the drug formulation. 4. The step of this use case is resume at step at step 3 of the normal flow. In step 6 of the normal flow, if the system gets "fail" result instead of getting "successful" result. 1. The system shows a new drug reformulation to the user. In the step 5 of the normal flow, if the user selects "cancel" instead of selecting "confirm". 1. The system shows the administrator main page. **Exception:** In step 4 of the normal flow, if the user inputs dissolution profile in the wrong format. 1. The system shows the error message about Dissolution profile format is wrong. 2. The user go back to do the step 4 of the normal flow again. In step 4 of the normal flow, if the user inputs a Disintegration time in a wrong format. 1. The system shows the error message about Disintegration time format is wrong. 2. The user go back to do the step 4 of the normal flow again. In step 4 of the normal flow, if the user inputs a Pharmaceutical equivalence in a wrong format. 1. The system shows the error message about Disintegration Time format is wrong. 2. The user go back to do the step 4 of the normal flow again. In all of step of the normal flow, if the system disconnects from an internet 1. The system shows the error message about internet disconnection. Include: URS-24

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# URS 08: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-57	The system shows a list of drug formulation history.
SRS-60	The system provides the Graphic user interface (GUI) which receive Dissolution
	profile, Disintegration time and Pharmaceutical equivalence.
SRS-40	The system can check the Dissolution Profile at DF property. The Dissolution Profile must be a float value.
SRS-58	The system provides a search bar for searching the history. The search bar uses the date of making drug reformulation for searching.
SRS-61	The system evaluate the system by using the dissolution profile, disintegration time and pharmaceutical equivalence.
SRS-62	The system shall show the successful evaluate the system.
SRS-63	The system shall show the fail message when the evaluation not pass. The system send the new drug reformulation to the user.
SRS-38	The system can check the disintegration time. The disintegration time must be an integer value.
SRS-64	The system can check the Pharmaceutical equivalence. The Pharmaceutical equivalence must be a float value.
SRS-53	The system shall display an error message "The disintegration time must be an integer value."
SRS-55	The system shall display an error message "The dissolution profile must be a float value."
SRS-65	The system shall display an error message "The Pharmaceutical equivalence must be a float value."
SRS-12	The system shall display an error message "The system is disconnect from the internet."

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URS-09: The user adds a new drug substance property into the system.

Description	0		,	no the system					
User Requirement	URS-09								
Specification ID:									
User Requirement	The user adds	a ne	w substance	property into	the s	system.			
Specification									
Name:									
Create By:	Panupak		Last	t update by :	Par	nupak Wichaidit			
	Wichaidit								
Date Created :	April 7, 2014		Last Re	vision Date :	Ma	y 22, 2014			
Actor:	Expert Pharma								
Description:		d, wh	en the user w	ants to add a	new	substance property to the			
	system.								
Trigger:					orop	erty" for adding the new			
	substance pro								
Pre-condition:			nust log into t						
Post-condition:					prop	erty to the system.			
Input data	Part		ut name	Example		Description			
	Solubility	Тур	e	"SlightlySolu	ıbl	Type should be the			
				e"		character			
			ximum	30.0		Maximum Value should			
		Val		10.12		be the float number			
			nimum	10.12		Minimum Value should			
		Val		2.2		be the float number			
		3011	ubility Value	2.3		Solubility Value should be the float number			
	Degradation	Тур		"Solvolysis"		The word should be the			
	Mechanism	ıyμ	·e	Solvolysis		character. The user can			
	IVICCIIAIIISIII					choose input nothing.			
	Kinetic	Тур	ie	"PseudoFirst	ŀΩr	The word should be the			
	Reaction	.,,,		derKinetic"		character. The user can			
						choose input nothing			
	Pka	Ma	ximum Pka	20.23		Maximum Pka should be			
						the float number			
		Mir	nimal PKa	10.80		Minimal Pka should be			
						the float number			
		Pka	Туре	"Strong"		Type should be the			
						character			
		PKa	Value	4.23		Pka Value should be the			
						float number			
	Partition		tition	2.67		Partition Coefficient			
	Coefficient		efficient			Value should be the			
		Val				float number			
			tition	"GoodAbsor	bti	The word should be the			
			efficient	on"		character.			
		Тур	e						

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	Solid state	Туре	"CrystallineMa	The word should be the				
	Joha state	Туре	terials"	character.				
	Hygroscopici	Туре	"Slightly	The word should be the				
		Туре	hygroscopic"	character.				
	ty ParticleSize	Tuno	"FineParticle"					
	Particlesize	Туре	FineParticle	Type should be the				
		D. 4	2.40	character				
		Maximum	2.40	Maximum Value should				
		Value		be the float number				
		Minimum	3.40	Minimum Value should				
		Value		be the float number				
		Particle Value	2.60	Particle Value should be				
				the float number				
	Flow ability	Туре	"FairFlowabilit	The word should be the				
			у"	character.				
	Density	Туре	"TrueDentity"	Type should be the				
				character				
		Powder	2.87	Powder Density Value				
		Density Value		should be the float				
				number				
	Compound	Туре	"Binder"	The word should be the				
	Function			character.				
		Value	3.56	The value of compound				
				function value should be				
				the float number.				
Normal Flow:	1. The u	ser opens adding	the new substance	property page.				
	2. The u	ser selects some o	of the substance pr	operties such as Solubility,				
	Degra	dation Mechanisr	n, Kinetic Reaction	, Pka, Partition Coefficient				
	Prope	rty, Solid state, H	ygroscopicity, Part	icle Property, Flow ability				
	Prope	rty, Density, Salt I	Property, Compou	nd Function.				
	3. The u	ser inputs data fo	llow the kind subst	ance property. The				
	exam	ple of input is illus	strated on the table	e of input data.				
	4. The u	ser selects "save"	for adding the nev	v substance property to				
	the sy	rstem.						
	5. The sy	stem validates th	e input value.					
	6. The sy	stem saves the n	ew substance prop	erty into the system.				
	7. The sy	stem shows the a	adding new substa	nce property successful				
	page.							
Alternative Flow:	• In the	step 3 of the nor	mal flow, if the use	r selects "cancel" instead				
	of sele	ecting "save."						
	1. Th	ne system resume	at the step 2 of no	ormal flow.				
Exception:								
	• In ste	p 5 of the norma	al flow, if the user	inputs the Solubility in a				
	wrong	g format.		·				
	<ol> <li>The system shows the error message about the Solubility format</li> </ol>							
	is wrong.							
	2. Tł							
	a In sta	on E of the new	mal flow if the	usor inputs Dogradation				
				user inputs Degradation				
	IVIECTI	anism in a wrong	ioillat.					

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- 1. The system shows the error message about the Degradation Mechanism is wrong.
- 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Dissolution Property in a wrong format.
  - 1. The system shows the error message about the Dissolution Property is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Kinetic Reaction in a wrong format.
  - 1. The system shows the error message about the Kinetic Reaction is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Pka in a wrong format.
  - 1. The system shows the error message about the Pka is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Partition Coefficient in a wrong format.
  - 1. The system shows the error message about the Partition Coefficient Property is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Solid state in a wrong format.
  - 1. The system shows the error message about the Solid state is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Hygroscopicity in a wrong format.
  - 1. The system shows the error message about the Hygroscopicity Property is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Particle Property in a wrong format.
  - 1. The system shows the error message about the Particle Property is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.
- In step 5 of the normal flow, if the user inputs Flow ability in a wrong format.
  - 1. The system shows the error message about the Flow ability Property is wrong.
  - 2. The user go back to do the step 3 of the normal flow again.

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In step 5 of the normal flow, if the user inputs Density in a wrong format.

 The system shows the error message about Density is wrong.
 The user go back to do the step 3 of the normal flow again.

 In step 5 of the normal flow, if the user inputs Compound Function in a wrong format.

 The system shows the error message about the Compound Function is wrong.
 The user go back to do the step 3 of the normal flow again.

 In all of step of the normal flow, if the system disconnects from an internet.

 The system shows the error message about internet disconnection.

#### URS 09: System requirement specification (SRS)

No	System requirement specification (SRS)							
SRS-66	The system provides the Graphic user inter	face (GUI) w	hich receive	substanc	ce			
	property such as Solubility, Degradation Mechanism, Kinetic Reaction, Pka, Partition							
	Coefficient Property, Solid state, Hygroscop	oicity, Particl	e Property,	Flow abi	lity			
	Property, Density, Salt Property, Compound	d Function.						
SRS-67	The system can check the solubility type for	rmat. The so	lubility type	format s	hould be			
	the characters.							
SRS-68	The system can check the solubility maximum	ım format. T	he solubility	/ maximu	m format			
	should be the float number.							
SRS-69	The system can check the solubility minima	I format. The	e solubility r	minimal fo	ormat			
	should be the float number.							
SRS-70	The system can check the solubility value format. The solubility value format should							
	be the float number.							
SRS-71	The system can check the Degradation Mechanism type format. The Degradation							
	Mechanism type format should be the char							
SRS-72	The system can check the Kinetic Reaction type format. The Kinetic Reaction type							
	format should be the characters.							
SRS-73	The system can check the Particle size type	format. The	Particle size	type for	mat			
	should be the characters.							
SRS-74	The system can check the Particle size maximum format. The Particle size maximum							
	format should be the float number.							
SRS-75	The system can check the Particle size mini	mal format.	The Particle	size mini	mal			
	format should be the float number.							
SRS-76	The system can check the Particle size value format. The Particle size value format							
	should be the float number.							
SRS-77	The system can check the Partition Coeffici	ent type forr	nat. The Pai	rtition Co	efficient			
	type format should be the characters.							
SRS-78	The system can check the Partition Coefficient value format. The Partition Coefficient							
	vale format should be the float number.							
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SRS-79	The system can check the Solid state type format. The Solid state type format should
	be the characters.
SRS-80	The system can check the Hygroscopicity type format. The Hygroscopicity type format should be the characters.
SRS-81	The system can check the Pka type format. The Pka type format should be the
31/3 01	characters.
SRS-82	The system can check the Pka maximum format. The Pka maximum format should be
	the float number.
SRS-83	The system can check the Pka minimal format. The Pka minimal format should be the
	float number.
SRS-84	The system can check the Pka value format. The Pka value format should be the float
	number.
SRS-85	The system can check the flow ability type format. The flow ability type format should
	be the characters.
SRS-86	The system can check the density type format. The density type format should be the
	characters.
SRS-87	The system can check the density value format. The density value format should be
	the float number.
SRS-88	The system can check the Compound Function type format. The Compound Function
	type format should be the characters.
SRS-89	The system can check the Compound Function value format. The Compound Function
	value format should be the float number.
SRS-90	The system save the substance property to the system.
SRS-91	The system shall show the successful add a new substance property page.
SRS-92	The system shall display the error message "The solubility type should be the
01.0 32	characters."
SRS-93	The system shall display the error message "The solubility maximum should be the
01.0 33	float number."
SRS-94	The system shall display the error message "The solubility minimal should be the float
01.0 5 1	number."
SRS-95	The system shall display the error message "The solubility value should be the float
01.0 33	number."
SRS-96	The system shall display the error message "The Degradation Mechanism type should
	be the characters."
SRS-97	The system shall display the error message "The Kinetic Reaction type should be the
	characters."
SRS-98	The system shall display the error message "The Pka type should be the characters."
SRS-99	The system shall display the error message "The Pka maximum should be the float
	number."
SRS-100	The system shall display the error message "The Pka minimal should be the float
3.13 100	number."
SRS-101	The system shall display the error message "The Pka value should be the float
33 101	number."
SRS-102	The system shall display the error message "The Partition Coefficient type should be
31.3 102	the characters."
SRS-103	The system shall display the error message "The Partition Coefficient value should be
21/2 103	the float number."
SRS-104	The system shall display the error message "The solid state type should be the
31/3 104	characters."
	- Characters.

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SRS-105	The system shall display the error message "The Hygroscopicity type should be the characters."
SRS-106	The system shall display the error message "The particle size type should be the characters."
SRS-107	The system shall display the error message "The particle size maximum should be the float number."
SRS-108	The system shall display the error message "The particle size minimal should be the float number."
SRS-109	The system shall display the error message "The particle size value should be the float number."
SRS-110	The system shall display the error message "The Particle Property should be the characters."
SRS-111	The system shall display the error message "The Flow ability type should be the characters."
SRS-112	The system shall display the error message "The density type should be the characters."
SRS-113	The system shall display the error message "The density value should be the float number."
SRS-114	The system shall display the error message "The compound function type should be the characters."
SRS-115	The system shall display the error message "The compound function value should be the float number."
SRS-12	The system shall display the error message "The system is disconnect from the internet."

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URS-10: The user updates an existing substance property in the system.

Description	LIDC 40					
User	URS-10					
Requirement						
Specification ID:						
User	The user updates	an existing substa	ance property	in the sys	stem.	
Requirement						
Specification						
Name:						
Create By :	Panupak Wichaid	it Last	t update by :	Panunal	k Wichaidit	
Date Created :	April 7, 2014		vision Date:			
	Expert Pharmacis		vision Date :   May 25, 2014			
Actor:	•		crator er wants to update the existing substance propert			
Description:		nen the user wan	its to update t	ne existin	ig substance property	
	in the system.					
Trigger:		•	isting substan	ice" for ι	updating the existing	
	substance proper	ty in the system.				
Pre-condition:	The user in	must log into the	system.			
Post-condition:	The syste	ms saves the upd	ating substan	ce proper	ty to the system.	
Input data	Part	Input name	Example		Description	
	Solubility	Туре	"SlightlySolu	ıhle"	Type should be the	
	Soldonity	1,00	Siightiysolo	ibic	character	
	-	Maximum	30.0		Maximum Value	
			30.0			
		Value			should be the float	
	_				number	
		Minimum	10.12		Minimum Value	
		Value			should be the float	
					number	
		Solubility Value	2.3		Solubility Value	
					should be the float	
					number	
	Degradation	Туре	"Solvolysis"		The word should be	
	Mechanism		,		the character. The	
					user can choose	
					input nothing.	
	Kinetic	Туре	"PseudoFirst	t∩rderKi	The word should be	
	Reaction	Турс	netic"	Cruciki	the character. The	
	Reaction		netic		user can choose	
	51		20.22		input nothing	
	Pka	Maximum Pka	20.23		Maximum Pka	
					should be the float	
	_				number	
		Minimal PKa	10.80		Minimal Pka should	
					be the float	
					number	
		Pka Type	"Strong"		Type should be the	
					character	
		PKa Value	4.23		Pka Value should	
					be the float	
					number	
			<u> </u>		Halliber	

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	Daustiti au	Dantitian	2.67	Do atition		
	Partition	Partition	2.67	Partition		
	Coefficient	Coefficient		Coefficient Value		
		Value		should be the float		
				number		
		Partition	"GoodAbsorbtion"	The word should be		
		Coefficient		the character.		
		Туре		the character.		
	Solid state		"CrystallineMaterial	The word should be		
	Solid State	Туре	•			
			s"	the character.		
	Hygroscopicity	Туре	"Slightly	The word should be		
			hygroscopic"	the character.		
	ParticleSize	Туре	"FineParticle"	Type should be the		
				character		
		Maximum	2.40	Maximum Value		
		Value		should be the float		
		· arac		number		
		Minimum	3.40	Minimum Value		
			3.40			
		Value		should be the float		
				number		
		Particle Value	2.60	Particle Value		
				should be the float		
				number		
	Flow ability	Туре	"FairFlowability"	The word should be		
	,	1,7,50		the character.		
	Density	Туре	"TrueDentity"	Type should be the		
	Delisity	Туре	Truebentity	character		
		D. J.	2.07			
		Powder	2.87	Powder Density		
		Density Value		Value should be the		
				float number		
	Compound	Туре	"Binder"	The word should be		
	Function			the character.		
		Max	2.0	Maximum Value		
		Concentration		should be the float		
				number		
		Min	1.0	Minimum Value		
		Concentration		should be the float		
		Concentration		number		
Normal Flow:	1 Thousan	onone undatine ti	ho ovicting cubetones			
Normal Flow:			he existing substance p			
	·		e substance properties	•		
	3. The user selects the substance property from the list of substance					
	property type.					
	4. The user inputs data follow the substance property. For example, if					
	user selects "solubility" .the user must input type, a maximum value,					
	minimum value and solubility value.					
			adding the update sub	stance property to		
	the syste		. U 2 p. 00.00 00.00	h 1 1		
			to update" for update t	he existing substance		
			io apaate Toi apaate t	THE EXISTING SUBSTRINE		
	in the system.  7. The system validates the input value.					
	7. The syste	em vandates the ir	iput value.			

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#### 8. The system updates the existing substance property that selected by the user. 9. The system shows the existing substance updating successful page. **Alternative** In step 2 of the normal flow, if the user uses search bar for searching Flow: the existing substance property by the substance property type instead of selecting the existing substance property in the list. 1. The user inputs the substance property type in a search bar. 2. The user selects "searching" for searching the existing substance property in the system. 3. The system shows the substance property. 4. The step of this use case is resumed at step 3 of the normal flow. In the step 3 of the normal flow, if the user selects "cancel" instead of selecting "confirm to update." 1. The system shows the main page of the program. **Exception:** In step 6 of the normal flow, if the user inputs the Solubility in a wrong format. 1. The system shows the error message about the Solubility format is wrong. 2. The user go back to do the step 4 of the normal flow again. In step 6 of the normal flow, if the user inputs Degradation Mechanism

- in a wrong format.
  - 1. The system shows the error message about the Degradation Mechanism is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Dissolution Property in a wrong format.
  - 1. The system shows the error message about the Dissolution is
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Kinetic Reaction in a wrong format.
  - 1. The system shows the error message about the Kinetic Reaction is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Pka in a wrong format.
  - 1. The system shows the error message about the Pka is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Partition Coefficient in a wrong format.
  - 1. The system shows the error message about the Partition Coefficient is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.

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- In step 6 of the normal flow, if the user inputs Solid state in a wrong format.
  - 1. The system shows the error message about the Solid state is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Hygroscopicity in a wrong format.
  - 1. The system shows the error message about the Hygroscopicity is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Particle size in a wrong format.
  - 1. The system shows the error message about the Particle size is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Flow ability in a wrong format.
  - 1. The system shows the error message about the Flow ability is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Density in a wrong format.
  - 1. The system shows the error message about Density is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In step 6 of the normal flow, if the user inputs Compound Function in a wrong format.
  - 1. The system shows the error message about the Compound Function is wrong.
  - 2. The user go back to do the step 4 of the normal flow again.
- In all of steps of the normal flow, if the system disconnects from an internet.
  - 1. The system shows the error message about internet disconnection.

Include: URS-24

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URS 10: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-66	The system provides the Graphic user interface (GUI) which receive substance
	property such as Solubility, Degradation Mechanism, Kinetic Reaction, Pka, Partition
	Coefficient Property, Solid state, Hygroscopicity, Particle Property, Flow ability
	Property, Density, Salt Property, Compound Function.
SRS-116	The system shows the list of the existing substance property in the system.
SRS-117	The system provides the search bar for searching the list of substance property. The
	search bar uses the type of substance property for searching.
SRS-67	The system can check the solubility type format. The solubility type format should be
	the characters.
SRS-68	The system can check the solubility maximum format. The solubility maximum format
	should be the float number.
SRS-69	The system can check the solubility minimal format. The solubility minimal format
	should be the float number.
SRS-70	The system can check the solubility value format. The solubility value format should
3113 70	be the float number.
SRS-71	The system can check the Degradation Mechanism type format. The Degradation
3113 71	Mechanism type format should be the characters.
SRS-72	The system can check the Kinetic Reaction type format. The Kinetic Reaction type
31(3 / 2	format should be the characters.
SRS-73	The system can check the Particle size type format. The Particle size type format
3113-73	should be the characters.
SRS-74	The system can check the Particle size maximum format. The Particle size maximum
3N3-74	format should be the float number.
SRS-75	The system can check the Particle size minimal format. The Particle size minimal
3113-73	format should be the float number.
SRS-76	
3K3-70	The system can check the Particle size value format. The Particle size value format should be the float number.
SRS-77	
3K3-77	The system can check the Partition Coefficient type format. The Partition Coefficient
CDC 70	type format should be the characters.
SRS-78	The system can check the Partition Coefficient value format. The Partition Coefficient
CDC 70	vale format should be the float number.
SRS-79	The system can check the Solid state type format. The Solid state type format should
CDC 00	be the characters.
SRS-80	The system can check the Hygroscopicity type format. The Hygroscopicity type format
CDC 04	should be the characters.
SRS-81	The system can check the Pka type format. The Pka type format should be the
	characters.
SRS-82	The system can check the Pka maximum format. The Pka maximum format should be
	the float number.
SRS-83	The system can check the Pka minimal format. The Pka minimal format should be the
	float number.
SRS-84	The system can check the Pka value format. The Pka value format should be the float
	number.
SRS-85	The system can check the flow ability type format. The flow ability type format should
	be the characters.
SRS-86	The system can check the density type format. The density type format should be the
	characters.

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SRS-112	The system shall display the error message "The density type should be the
	characters."
SRS-113	The system shall display the error message "The density value should be the float number."
SRS-114	The system shall display the error message "The compound function type should be the characters."
SRS-115	The system shall display the error message "The compound function value should be the float number."
SRS-12	The system shall display the error message "The system is disconnect from the internet."

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URS-11: The user deletes an existing substance property into the system.

User Requirement Specification ID:	URS-11					
User Requirement	The user deletes an existing substance property into the system.					
Specification Name:		J	,	,		
Create By :	Panupak Wichaidit	Last upo	Last update by: Panupak Wichaidit			
Date Created :	April 7, 2014	Last Revisio	<b>n Date :</b> May 25, 2	2014		
Actor:	Expert Pharmacists, Ad	lministrator				
Description:	URS-11 is used, when t	he user wants	to delete the existin	g substance		
	<u> </u>	property from the system.				
Trigger:		The user selects "delete the existing substance" for deleting the existing				
	substance property fro					
Pre-condition:		log into the sys				
Post-condition:	· 1		ance property from	•		
Input data		ut name	Example	Description		
	Solubility Typ	e	"freely soluble"	The type of		
				substance		
				property should be character.		
Normal Flow:	1. The user open	s deleting the e	  visting substance nr			
ivormar riow.	<ol> <li>The user opens deleting the existing substance property page.</li> <li>The user selects existing substance property type from the list.</li> </ol>					
	3. The user selects "confirm to delete" for deleting the existing					
	substance from the system.					
		•	essage for checking	the drug		
	substance dele					
	5. The user selec	ts "Yes" for con	firming to delete th	e member		
	account.					
	6. The system deletes the substance property that selected by the					
		user.				
All	<ul> <li>7. The system shows deleting the existing substance successful page.</li> <li>In step 2 of the normal flow, if the user uses search bar for</li> </ul>					
Alternative Flow:	· ·					
	_	searching the existing substance property by the substance property type instead of selecting the existing substance property				
	in the list.	ilisteau oi selet	tillig tile existillig sui	ostance property		
		nouts the subst	ance property type i	in a search bar.		
		•	ng" for searching the			
		property in the	•	0.10		
			ostance property.			
	4. The step o	f this use case i	s resumed at step 3	of the normal		
	flow.					
	In the step 3 of the normal flow, if the user selects "cancel" instead					
	of selecting "Yes."					
	•		in page of the prog			
Exception:	·	t the normal flo	ow, if the system dis	sconnects from an		
	internet.  2. The system shows the error message about internet					
	disconnect		ie error message	about internet		
	disconnec	.1011.				
	L					

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Include:	URS-24

#### URS 11: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-116	The system shows the list of the existing substance property in the system.
SRS-117	The system provides a search bar for searching the list of substance. The search bar uses the name of the substance property for searching.
SRS-120	The system shows the Confirm dialog box (YES/NO option). The confirm dialog is used for confirming to delete existing substance property.
SRS-121	The system delete the existing substance property from the system that selected by the user.
SRS-122	The system shall show the successful delete the existing substance property page.
SRS-12	The system shall display an error message "The system is disconnect from the internet."

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URS-12: The user adds a new substance into the system.

User Requirement	URS-12						
Specification ID:							
User Requirement	The user adds a n	The user adds a new substance into the system.					
Specification							
Name:							
Create By:	Panupak Wichaid	it	Last u	ipdate by:	Panupak W	ichaidit	
Date Created :	April 7, 2014			sion Date:	April 7, 201	4	
Actor:	Expert Pharmacis	ts, Administrator					
Description:	URS-12 is used, w	hen t	the user want	s to add a n	ew substance	e to the system.	
Trigger:	The user selects " the system.	Add	the new subs	tance" for a	dding the nev	w substance to	
Pre-condition:	•	must	log into the s	system.			
Post-condition:			ves the new s		the system.		
Input data	Part	Inpi	ut Name	Example	•	Description	
	Substance's	Nar	ne	"Aplo"		The word	
	name					should be the	
						character.	
	Water Solubility	Тур	е	"SlightlySo	luble"	The value	
	Property					should be the	
						integer value.	
	Stability	Deg	gradation	"Oxidation"		The word	
	Property	Me	chanism			should be the	
						character.	
		Kine	etic	"FirstOrderKinetics"		The word	
		Rea	ction			should be the	
						character.	
	Dissolution	Тур	e	"Weak"		The word	
	Property					should be the	
						character.	
	Partition	Тур	e	"GoodAbs	orbtion"	The word	
	Coefficient					should be the	
	Property					character.	
	Physical Form	Тур	e	"Crystallin	eMaterials"	The word	
	Property					should be the	
		_		//CI: 1 .1 .1	. ,,	character.	
	Hygroscopicity	Тур	е	"Slightly h	ygroscopic"	The word	
	Property					should be the	
	Doubiel-	<b>T</b> .		((A A:	المالم الشروالم	character.	
	Particle	тур	Type "MicronizedParticle"		eurarticie"	The word	
	Property					should be the	
	Alcohol	T		"Erook Cal	ublo"	character.	
	Alcohol	Тур	e	"FreelySol	uble	The word	
	Solubility					should be the	
	Property					character.	

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	Flow ability	Туре	"ExcellentFlowability"	The word		
	Property			should be the character.		
	Powder Density	Туре	"Trueldentity"	The word		
	Property	71-	,	should be the		
				character.		
	Salt Property	Pka	"Very weak"	The word		
				should be the		
		Molecular	2.57	character. The value		
		weight	2.57	should be the		
		3 0		float value.		
	Weight	Value	2.55	The value		
	Property			should be the		
				float value.		
	Iconicity	Туре	"good"	The word should be the		
				character.		
Normal Flow:	1. The user of	ppens adding the	new substance page.	character.		
			nce name, Water Solubilit	ry Property,		
	Stability F	roperty, Dissoluti	on Property, Partition Co	efficient		
		•	operty, Hygroscopicity Pro	• •		
		-	Property, Flow ability Property, and			
	-		erty, Weight Property and adding the new substance	•		
		m validates the in	•	· C.		
			ance to the system			
	6. The syste	m shows the new	substance adding succes	sful page.		
Alternative Flow:		•	flow, if the user select "c	ancel" instead of		
	selecting					
Exception:			main page of the progran w, if the user inputs the			
Exception.	·		ice name in the system.	substance name		
			error message about the	substance name		
	is alre	eady used.	· ·			
	2. The u	ser go back to do	the step 2 of the normal	flow again.		
		of the normal fic in a wrong format	ow, if the user inputs the	water Solubility		
		•	 error message about the	Water Solubility		
		erty format is wro	_			
	2. The user go back to do the step 2 of the normal flow again.					
	a In stor 4	of the named fla	w if the user innuts Ctab	ility Droposty is a		
	<ul> <li>In step 4 of the normal flow, if the user inputs Stability Property in a</li> </ul>					
	wrong format.  1. The system shows the error message about the Stability Property					
	is wro			,		
	2. The u	ser go back to do	the step 2 of the normal	flow again.		
	2-Software Requiremen					

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- In step 4 of the normal flow, if the user inputs Dissolution Property in a wrong format.
  - 1. The system shows the error message about the Dissolution Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Partition Coefficient Property in a wrong format.
  - 1. The system shows the error message about the Partition Coefficient is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Physical Form Property in a wrong format.
  - 1. The system shows the error message about the Physical Form Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Hygroscopicity Property in a wrong format.
  - 1. The system shows the error message about the Hygroscopicity Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Particle Property in a wrong format.
  - 1. The system shows the error message about the Particle Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Alcohol Solubility Property in a wrong format.
  - 1. The system shows the error message about the Alcohol Solubility is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Flow ability Property in a wrong format.
  - 1. The system shows the error message about the Flow ability Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Powder Density Property in a wrong format.
  - 1. The system shows the error message about the Powder Density is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Salt Property in a wrong format.

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1. The system shows the error message about the Salt Property is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user inputs Weight Property in a wrong format. 1. The system shows the error message about the Weight Property is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user inputs Iconicity in a wrong format. 1. The system shows the error message about the Iconicity is wrong. 2. The user go back to do the step 2 of the normal flow again. In all of step of the normal flow, if the system disconnects from an internet. 1. The system shows the error message about internet disconnection. Include: URS-24

#### URS 12: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-123	The system provides the Graphic user interface (GUI) which receive substance name,
	Water Solubility Property, Stability Property, Dissolution Property, Partition
	Coefficient Property, Physical Form Property, Hygroscopicity Property, Particle
	Property, Alcohol Solubility Property, Flow ability Property, Powder Density Property,
	Salt Property, Weight Property and Iconicity.
SRS-124	The system can check the substance name format. The substance name format should
	be the character.
SRS-125	The system can check the Water Solubility Property format. The Water Solubility
	Property format should be the character.
SRS-126	The system can check the Stability Property format. The Stability Property format
	should be the character.
SRS-127	The system can check the Dissolution Property format. The Dissolution Property
	format should be the character.
SRS-128	The system can check the Partition Coefficient Property format. The Partition
	Coefficient Property format should be the character.
SRS-129	The system can check the Physical Form Property format. The Physical Form Property
	format should be the character.
SRS-130	The system can check the Hygroscopicity Property format. The Hygroscopicity
	Property format should be the character.
SRS-131	The system can check the Particle Property format. The Particle Property format
	should be the character.
SRS-132	The system can check the Alcohol Solubility Property format. The Alcohol Solubility
	Property format should be the character.

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SRS-133	The system can check the Flow ability Property format. The Flow ability Property
	format should be the character.
SRS-134	The system can check the Powder Density Property format. The Powder Density
	Property format should be the character.
SRS-135	The system can check the Salt Property format. The Salt Property format should be
	the float value.
SRS-136	The system can check the Weight Property format. The Weight Property format
	should be float value.
SRS-137	The system can check the Iconicity format. The Iconicity format should be the
	character.
SRS-138	The system save the substance to the system.
SRS-139	The system shall show the successful add a new substance page.
SRS-140	The system shall display the error message "The substance name should be the characters."
SRS-141	The system shall display the error message "The Water Solubility Property should be
	the characters."
SRS-142	The system shall display the error message "The Stability Property should be the
	characters."
SRS-143	The system shall display the error message "The Dissolution Property should be the
	characters."
SRS-144	The system shall display the error message "The Partition Coefficient should be the
	characters."
SRS-145	The system shall display the error message "The Physical Form Property should be the
	characters."
SRS-146	The system shall display the error message "The Hygroscopicity Property should be
	the characters."
SRS-147	The system shall display the error message "The Particle Property should be the
	characters."
SRS-148	The system shall display the error message "The Alcohol Solubility Property should be
	the characters."
SRS-149	The system shall display the error message "The Flow ability Property should be the
	characters."
SRS-150	The system shall display the error message "The Powder Density Property should be
	the characters."
SRS-151	The system shall display the error message "The Salt Property should be the float
000 450	value."
SRS-152	The system shall display the error message "The Weight Property should be the float
CDC 453	value."
SRS-153	The system shall display the error message "The Iconicity should be the characters."
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

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URS-13: The user updates an existing substance in the system.

User Requirement	URS-13					
Specification ID:						
User Requirement	The user upd	lates an exi	sting s	substance in the sys	stem.	
Specification						
Name:					-	
Create By :	Panupak Wic			Last update by:		upak Wichaidit
Date Created :	April 7, 2014			st Revision Date :	Apri	l 7, 2014
Actor:	Expert Pharn					
Description:		JRS-13 is used, when the user wants to update the existing substance in t				
	system.	ystem. he user selects "Update the existing substance" for updating the existing				
Trigger:		•		existing substance	tor u	paating the existing
Pre-condition:	substance in  The			the system.		
Post-condition:				substance updatir	og to t	the system
Input data	Part	Input Nan		Example	ig to	Description
iliput uata	Substance'	Name	ie	"Aplo"		The word should be
	s name	Ivallie		Αρίο		the character.
	Water	Туре		"SlightlySoluble"		The value should be
	Solubility	Турс		SlightlySoluble		the integer value.
	Property					the integer value.
	Stability	Degradati	on	"Oxidation"		The word should be
	Property	Mechanis		Oxidation		the character.
		Kinetic		"FirstOrderKinetics"		The word should be
		Reaction				the character.
	Dissolution	Туре		"Weak"		The word should be
	Property	,,				the character.
	Partition	Туре		"GoodAbsorbtion	"	The word should be
	Coefficient					the character.
	Property					
	Physical	Туре		"CrystallineMater	rials	The word should be
	Form			"		the character.
	Property					
	Hygroscopi	Туре		"Slightly		The word should be
	city			hygroscopic"		the character.
	Property	_		//	,	<del>-</del> 1
	Particle	Туре		"MicronizedPartio	cle"	The word should be
	Property	Tune		"Free object a landar "		the character.
	Alcohol	Туре		"FreelySoluble"		The word should be
	Solubility					the character.
	Property Flow ability	Tyne		"ExcellentFlowab	ility	The word should be
	Property	y Type		"	шсу	the character.
	Powder	• •		"Trueldentity"		The word should be
	Density	, ,		Traciacintity		the character.
	Property					and character.
	Salt	Pka		"Very weak"		The word should be
	Property			,		the character.
0505	P-Software Requir	i amarit				

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		Molecular	2.57	The value should be
		weight	2.37	the float value.
	Weight	Value	2.55	The value should be
	Property			the float value.
	Iconicity	Туре	"good"	The word should be
	, , , , , , , , , , , , , , , , , , , ,	. , , , ,	8	the character.
Normal Flow:	1. The	user opens updat	ing the existing substance	
			ubstance from a list of su	
	3. The	user inputs the	substance name, Wat	er Solubility Property,
	Stab	ility Property, Dis	solution Property, Partiti	on Coefficient Property,
	Phys	ical Form Proper	rty, Hygroscopicity Prop	erty, Particle Property,
		•	operty, Flow ability Pro	•
	•	• • • • • • • • • • • • • • • • • • • •	y, Weight Property and	•
			irm to update" for updat	e the existing substance
		e system.	tha ta a ta a ta a	
		system validates	-	h a
			e existing substance to t	· ·
Alternative Flow:			e existing substance upda al flow, if the user uses so	
Aitemative now.		•	e by the substance name	•
		existing substance	•	instead of selecting
		•	ne substance name in the	e search bar.
		-	searching" for searching	
		ormulation in the		0 0
		The system shows	•	
	4. 1	The step of this us	se case is resumed at a s	tep 3 of the normal
	f	low.		
		•	ormal flow, if the user se	lects "cancel" instead
		lecting "confirm t	·	
			ne at the step 3 of the no	
Exception:		•	nal flow, if the user inpu	
			bstance name in the syst	
		s already used.	s the error message abo	ut the substance name
		•	to do the step 2 of the no	ormal flow again
	2.	THE USET GO DUCK	to do the step 2 of the in	omiai now agam.
	• In st	ep 4 of the norm	nal flow, if the user inpu	its the Water Solubility
		erty in a wrong for	-	,
	•		s the error message abo	out the Water Solubility
		Property format is		·
	2. 1	The user go back	to do the step 2 of the no	ormal flow again.
		_		
		•	al flow, if the user input	s Stability Property in a
		ng format.		and contribution
		-	s the error message abou	ut the Stability Property
		s wrong.	to do the stan 2 of the s	ormal flow again
	2. 1	ine user go back	to do the step 2 of the no	uttilai liuw agalil.
	<u> </u>			

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- In step 4 of the normal flow, if the user inputs Dissolution Property in a wrong format.
  - 1. The system shows the error message about the Dissolution Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Partition Coefficient Property in a wrong format.
  - 1 The system shows the error message about the Partition Coefficient is wrong.
  - 2 The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Physical Form Property in a wrong format.
  - 1. The system shows the error message about the Physical Form Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Hygroscopicity Property in a wrong format.
  - 1. The system shows the error message about the Hygroscopicity Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Particle Property in a wrong format.
  - 1. The system shows the error message about the Particle Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Alcohol Solubility Property in a wrong format.
  - 1. The system shows the error message about the Alcohol Solubility is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Flow ability Property in a wrong format.
  - 1. The system shows the error message about the Flow ability Property is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Powder Density Property in a wrong format.
  - 1. The system shows the error message about the Powder Density is wrong.
  - 2. The user go back to do the step 2 of the normal flow again.
- In step 4 of the normal flow, if the user inputs Salt Property in a wrong format.

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1. The system shows the error message about the Salt Property is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user inputs Weight Property in a wrong format. 1. The system shows the error message about the Weight Property is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user inputs Iconicity in a wrong format. 1. The system shows the error message about the Iconicity is wrong. 2. The user go back to do the step 2 of the normal flow again. In all of steps of the normal flow, if the system disconnects from an internet. 1. The system shows the error message about internet disconnection. Include: URS-24

#### URS 13: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-123	The system provides the Graphic user interface (GUI) which receive substance name,
	Water Solubility Property, Stability Property, Dissolution Property, Partition
	Coefficient Property, Physical Form Property, Hygroscopicity Property, Particle
	Property, Alcohol Solubility Property, Flow ability Property, Powder Density Property,
	Salt Property, Weight Property and Iconicity.
SRS-154	The system shows the list of the existing substance in the system.
SRS-155	The system provides the search bar for searching the list of substance. The search bar uses the name of substance for searching.
SRS-124	The system can check the substance name format. The substance name format should be the character.
SRS-125	The system can check the Water Solubility Property format. The Water Solubility Property format should be the character.
SRS-126	The system can check the Stability Property format. The Stability Property format should be the character.
SRS-127	The system can check the Dissolution Property format. The Dissolution Property format should be the character.
SRS-128	The system can check the Partition Coefficient Property format. The Partition Coefficient Property format should be the character.
SRS-129	The system can check the Physical Form Property format. The Physical Form Property format should be the character.
SRS-130	The system can check the Hygroscopicity Property format. The Hygroscopicity Property format should be the character.

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URS-14: The user deletes an existing substance into the system.

User Requirement Specification ID:	URS-14					
User Requirement Specification Name:	The user deletes an exi	sting substance into the	e system.			
Create By :	Panupak Wichaidit	Last update by :	Panupak Wichaidit			
Date Created :	April 7, 2014	Last Revision Date :	1			
Actor:	Expert Pharmacists, Ad					
Description:	· ·		the existing substance from			
	the system.		-			
Trigger:	The user selects "delet substance from the sys	•	" for deleting the existing			
Pre-condition:	·	log into the system.				
Post-condition:		etes the substance from	the system.			
Input data	Input name	Example	Description			
P	Substance name	"Aplo"	The substance name			
		'	should be the			
			character.			
Normal Flow:	1. The user opens	deleting the existing su	ıbstance page.			
	2. The user select	s existing substance fro	m the list.			
		s "confirm to delete" fo	r deleting the existing			
	substance fron	•				
		ows the alert message for	or checking the drug			
		substance deleting.				
		5. The administrator selects "Yes" for confirming to delete the				
		member account.  6. The system deletes the existing substance from the system.				
	1	_	substance successful page.			
Alternative Flow:	· ·	normal flow, if the use				
Aitemative How.	T		e substance name instead of			
	_	xisting substance in a lis				
	_	puts the substance nam				
		•	arching the existing drug			
		n in the system.				
	3. The system	shows the substance.				
	4. The step of	f this use case is resume	d at step 3 of the normal			
	flow.					
	1		user selects "cancel" instead			
	of selecting "Ye					
<b>5!</b>	·	n shows the main page o	•			
Exception:	· ·	r the normal flow, if the	system disconnects from an			
	internet.	m chaus the arrar	moccago about internet			
	1. The syste		message about internet			
	uisconnect	ion.				
Include:	URS-24					

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## URS 14: System requirement specification (SRS)

No	System requirement specification (SRS)			
SRS-154	The system shows the list of the existing substance in the system.			
SRS-155	The system provides the search bar for searching the list of substance. The search bar			
	use the name of substance for searching.			
SRS-158	The system shows the Confirm dialog box (YES/NO option). The confirm box use for			
	confirming the substance deleting.			
SRS-159	The system delete the existing substance from the system.			
SRS-160	The system shall show the successful delete the existing substance page.			
SRS-12	The system shall display the error message "The system is disconnect from the			
	internet".			

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## URS-15: The user views the substance in the system.

# Description

User Requirement	URS-15				
Specification ID:					
User Requirement	The user views the subs	The user views the substance in the system.			
<b>Specification Name:</b>		·			
Create By:	Panupak Wichaidit	Last update by:	Panupak Wichaidit		
Date Created :	April 2, 2014	Last Revision Date :	April 2, 2014		
Actor:	General Pharmacists, Ex	cpert Pharmacists, Adm	inistrator		
Description:	URS-15 is used, when the		<u> </u>		
Trigger:	The user selects "view t	he substance" to view t	the substance of the drug.		
Pre-condition:	The user must I	og into the system.			
Post-condition:	• N/A				
Normal Flow:	1. The user opens	The user opens the drug substance page.			
	2. The system shows a list of a drug substance name.				
	3. The user selects the name of drug reformulation that they want to				
	see a detail.				
	4. The system shows a detail of the history that the user selected.				
Alternative Flow:	<ul> <li>In step 3 of the normal flow, if the user use search bar for searching</li> </ul>				
	the substance by name instead of selecting the substance in a list.				
	1. The user inputs the name into the search bar.				
	2. The user se	2. The user selects "submit" for searching a substance by name.			
	3. The system shows the list of substance.				
Exception:	In all of step of the normal flow, if the system disconnects from an				
	internet				
	1. The system shows the error message about internet				
	disconnecti	on.			
Include:	URS-24				

# URS 15: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-154	The system shows the list of drug substance.
SRS-155	The system provides the search bar for searching the drug substance. The search bar
	use the name of substance to searching.
SRS-161	The system shows the detail of the substance. The substance detail include the
	substance name, Water Solubility Property, Stability Property, Dissolution Property,
	Partition Coefficient Property, Physical Form Property, Hygroscopicity Property,
	Particle Property, Alcohol Solubility Property, Flow ability Property, Powder Density
	Property, Salt Property, Weight Property and Iconicity
SRS-19	The system shall display the error message "The system is disconnect from the
	internet".

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URS-16: The user adds a new drug excipient to the system.

1						
User Requirement Specification ID:	URS-16					
User Requirement Specification Name:	The user adds a new dru	ig excipient to the syste	em.			
Create By :	Panupak Wichaidit	Last update by:	Panupak Wichaidit			
Date Created :	April 7, 2014	Last Revision Date :	April 7, 2014			
Actor:	Expert Pharmacists, Adn	ninistrator				
Description:	URS-16 is used, when the	e user wants to add a n	ew excipient into the system.			
Trigger:	The user selects "Add a	new drug excipient" fo	r adding a new drug			
	excipient into the syster	n.				
Pre-condition:	<ul> <li>The user must lo</li> </ul>	og into the system.				
Post-condition:	<ul> <li>The system save</li> </ul>	es the new drug excipie	nt into the system.			
Input data	Input Name	Example	Description			
	Substance Name	"Lexapro"	The word should be			
			the character.			
	Substance Role	"Binder"	The list substance role			
			should be the			
		2.40	characters			
	Max Concentration	2.40	The max concentration			
			should be the float number.			
	Min Concentration	3.67	The min concentration			
	Willi Concentration	3.07	should be the float			
			number.			
Normal Flow:	1. The user opens	add new drug excipien	l .			
		Substance name, Subst				
	Concentration a	nd Min Concentration.	·			
	<ol><li>The user selects</li></ol>	"save" for saving a new	w drug excipient into the			
	system.					
	•	dates the input data.				
	•	es a new drug excipient	-			
		ws a new drug excipien				
Alternative Flow:	In the step 3 of the norm	nai flow, if the user sele	ect "cancel" instead of			
	selecting "save".  1. The system show	ws the administrator m	ain nage			
Exception:	·		system disconnects from an			
LACEPTION.	internet	the normal now, if the	system disconnects from an			
		n shows the error	message about internet			
	disconnection					
	<ul> <li>In step 4 of the</li> </ul>	normal flow, if the us	er input the drug substance			
	name in a wron	•				
			ge about the substance name			
	format is wr	ong.				

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2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user input the drug substance role in a wrong format. 1. The system shows the error message about the substance role format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user input the max concentration in a wrong format. 1. The system shows the error message about the max concentration Intensity format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 4 of the normal flow, if the user input the min concentration in a wrong format. 3. The system shows the error message about the min concentration format is wrong. The user go back to do the step 2 of the normal flow again. Include: URS-20

#### URS 16: System requirement specification (SRS)

No	System requirement specification (SRS)		
SRS-162	The system provides the Graphic user interface (GUI) which receive the substance		
	name, substance role, max concentration and min concentration.		
SRS-163	The system can check the substance name format. The substance name format should		
	be the characters.		
SRS-164	The system can check the substance role format. The substance role format should be		
	the characters.		
SRS-165	The system can check the max concentration format. The max concentration format		
should be the float number.			
SRS-166	The system can check the min concentration format. The min concentration format		
	should be the float number.		
SRS-167	The system save the new drug excipient to the system.		
SRS-168	The system shall show the successful add a new drug excipient page.		
SRS-169	The system shall display the error message "The excipient name is not the		
	characters".		
SRS-170	The system shall display the error message "The substance role is not the characters".		
SRS-171	The system shall display the error message "The max concentration is not the float		
	number".		
SRS-172 The system shall display the error message "The min concentration is not the flo			
	number".		
SRS-12 The system shall display the error message "The system is disconnect from			
	internet".		

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URS-17: The user update an existing drug excipient in the system.

User Requirement	URS-17				
Specification ID:					
User Requirement	The user	updates an exis	sting drug excipient in	the	system.
Specification Name:	D	14 <i>P</i> - 1 1-11	1	-	and AAP destable
Create By :	•	Wichaidit	Last update by:		nupak Wichaidit
Date Created :	April 7, 2		Last Revision Date :	IVI	ay 25, 2014
Actor:		harmacists, Adn		tin a	drug eveinient in the
Description:	system.	s usea, when th	e user updates an exis	ung	arug excipient in the
Trigger:		selects "update	e an existing drug excip	ient	" to update an existing
		ipient in the sys			to apacto an emound
Pre-condition:			og into the system.		
Post-condition:			es the drug excipient up	odat	ing into the system.
Input data	Input Na	•	Example		Description
·	Substand		"Solvent", "Vehicle"	The list of substance role should be the characters	
	Max Con	ncentration	5.89		The max concentration should be the float number.
	Min Con	centration	3.67		The min concentration should be the float number.
Normal Flow:	1.	The user opens	the drug excipient upd	atin	g page.
	2.	The user selects	an existing drug excipi	ient	from a list for updating.
		•	a new data for updatin	-	
			on and min concentrat		
		The user selects excipient.	"confirm to update" for	or up	odate an existing drug
		•	dates the input data.		
		•	ate the existing drug ex	xcini	ent.
					ent updating successful
		page.	0.10		G
Alternative Flow:	•	In step 2 of the rathe existing drusted and the existing drusted and the existed and the existed and the step of the except and the step 3 of of selecting "cor	ug excipient by the sisting drug substance in outs the substance namelects "searching" for the system. shows the drug formulations use case is resumed.	subs n a li ne in sea atio d at s	a search bar. rching the existing drug n. step 3 of the normal flow. er select "cancel" instead

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# **Exception:** In all of step of the normal flow, if the system disconnects from an internet 1. The system shows the error message about internet disconnection. In step 5 of the normal flow, if the user inputs the drug substance role in a wrong format. 1. The system shows the error message about the substance role format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 5 of the normal flow, if the user inputs the max concentration in a wrong format. 1. The system shows the error message about the max concentration format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 5 of the normal flow, if the user inputs the min concentration in a wrong format. 1. The system shows the error message about the min concentration format is wrong. 2. The user go back to do the step 2 of the normal flow again Include: URS-24

#### URS 17: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-162	The system provides the Graphic user interface (GUI) which receive substance role,
	max concentration and min concentration.
SRS-173	The system shows the list of drug formulation.
SRS-174	The system provides the search bar for searching the list of drug excipient. The search bar uses the name of substance for searching.
SRS-164	The system can check the substance role format. The substance role format should be the characters.
SRS-165	The system can check the max concentration format. The max concentration format should be the float number.
SRS-166	The system can check the max concentration format. The min concentration format should be the float number.
SRS-175	The system update drug excipient
SRS-176	The system shall show the successful update existing drug excipient page.
SRS-170	The system shall display the error message "The substance role is not the characters".
SRS-171	The system shall display the error message "The max concentration is not the float number".
SRS-172	The system shall display the error message "The min concentration is not the float number".

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SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

# URS-18: The user deletes an existing drug excipient in the system.

·						
User Requirement Specification ID:	URS-18					
User Requirement	The user deletes an exis	ting drug excipient in t	he system.			
Specification Name:						
Create By :	Panupak Wichaidit	Last update by:	Panupak Wichaidit			
Date Created :	April 7, 2014	Last Revision Date :				
Actor:	Expert Pharmacists, Adr	ninistrator				
Description:	URS-18 is used, when the	ne user wants to delet	e the existing drug excipient			
	from the system.					
Trigger:	The user selects "Dele	te the existing drug	excipient" to delete a drug			
	excipient from the syste	m.				
Pre-condition:	The user must lo	og into the system.				
Post-condition:	<ul> <li>The system dele</li> </ul>	etes the existing drug ex	xcipient from the system.			
Input data	Input name	Example	Description			
	Substance name	"Lexapro"	The substance name			
			should be the			
		characters.				
Normal Flow:	-	the existing drug excipi				
	2. The user selects the substance name from the list.					
	3. The user selects "delete" for delete the existing drug excipient from					
	the system.					
	-	ws the alert message fo	or checking the drug			
	excipient deleti	-	.fi			
	<ol><li>5. The administrat excipient.</li></ol>	or selects "Yes" for cor	firming to delete the drug			
	· ·	etes the existing drug ex	xcipient form the system.			
			cipient deleting successful			
	page.					
Alternative Flow:		the normal flow, if the	user selects "cancel" instead			
	of selecting "Yes	s".				
	1. The system	shows the administrate	or main page.			
	_	normal flow, if the use				
	_	kisting drug excipient b				
		ting the existing drug e	-			
	•	outs the substance nam				
		_	arching the existing drug			
	· ·	excipient in the system.				
	-	shows the drug excipie				
	flow.	uns use case is resume	at a step 3 of the normal			
	HOW.					

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Exception:	• In	all of	step of th	e norma	I flow	, if the	system dis	connect	s from an
	internet								
	1.	The	system	shows	the	error	message	about	internet
		disco	nnection	l <b>.</b>					
Include:	URS-20								

## URS 18: System requirement specification (SRS)

No	System requirement specification (SRS)			
SRS-173	The system shows the list of drug excipient.			
SRS-174	The system provides the search bar for searching the list of drug excipient. The search			
	bar use the name of substance for searching.			
SRS-177	The system shows the Confirm dialog box (YES/NO option). For making confirm when			
	the administrator want to delete the existing drug excipient.			
SRS-178	The system deletes the drug excipient from the system.			
SRS-179	The system shall show the successful delete existing drug excipient case page.			
SRS-12	The system shall display the error message "The system is disconnect from the			
	internet".			

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## URS-19: The user views all of the excipient in the system.

## Description

				1		
User Requirement	URS-19					
Specification ID:						
User Requirement	The user view	s all the ex	cipient in the system.			
Specification Name:						
Create By:	Panupak Wicl	naidit	Last update by:	Panupak Wichaidit		
Date Created :	April 2, 2014		Last Revision Date:	April 2, 2014		
Actor:	General Phar	macists, Ex	pert Pharmacists, Adm	inistrator		
Description:	URS-18 is use	d, when th	ne user wants to view th	ne excipient of a drug.		
Trigger:	The user selects "view the formulation" to view the excipient of the drug.			v the excipient of the drug.		
Pre-condition:	• The u	The user must log into the system.				
Post-condition:	• N/A	• N/A				
Normal Flow:	<ol> <li>The user opens the viewing drug excipient page.</li> </ol>					
	2. The s	2. The system shows a list of a drug excipient name.				
				pient that they want to see a		
	detai			,		
	4. The	system sh	ows a detail of the d	rug excipient that the user		
	selec	ted.				
Alternative Flow:	<ul><li>In ste</li></ul>	p 3 of the i	normal flow, if the user	uses search bar for searching		
	the e	xcipient by	substance name inste	ad of selecting the excipient		
	in a li					
	1. T	he user in	outs the substance nam	e into the search bar.		
		•		searching the excipient by		
		ubstance n		, ,		
	3. T	he system	shows the list of drug e	excipient.		
Exception:		-		system disconnects from an		
	interi	•	•	•		
	1. The system shows the error message about internet					
	disconnection.					
			•			
Include:	URS-24					
L						

## URS 19: System requirement specification (SRS)

No	System requirement specification (SRS)			
SRS-173	The system shows the list of drug excipient.			
SRS-174	The system provides the search bar for searching the drug excipient. The search bar			
	uses the name of substance to searching.			
SRS-180	The system shows the detail of the formulation .the substance name, substance role,			
	max concentration and min concentration.			
SRS-12	The system shall display the error message "The system is disconnect from the			
	internet".			

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URS-20: The user adds a new drug formulation case into the system. Description

User Requirement	URS-20				
Specification ID:	UN3-20				
User Requirement	The user adds a new dru	g formulation case into	the system		
Specification Name:	The aser adds a new are	ag formalation case into	the system.		
Create By :	Panupak Wichaidit	Last update by :	Panupak Wichaidit		
Date Created :	April 7, 2014	Last Revision Date :	April 7, 2014		
Actor:	Expert Pharmacists, Adr	ninistrator	•		
Description:	•		new reformulation case into		
	the system for using wit	h case base reasoning s	ystem.		
Trigger:	The user selects "Add a	new drug formulation"	for adding a new drug		
	formulation into the system.				
Pre-condition:	The user must lo	The user must log into the system.			
Post-condition:	The system save	es the new drug reformu	ulation case into the		
	system.	· ·			
Input data	Input Name	Example	Description		
	Drug name	"Lexapro"	The word should be		
			the character.		
	Excipient name	talc, croscarmellose	The list of excipient		
		sodium,	should be the		
		microcrystalline	character.		
		cellulose/colloidal,			
		silicon dioxide and			
		magnesium			
	Excipient Role	Diluent, antiadherent	•		
		Libran, disintegrant	role should be the		
	E did a literation	5.24	character.		
	Excipient Intensity	5.34	The value of a		
			excipient Intensity should be the float		
			number		
	Excipient Quantity	6.34	The value of a		
	Exciplent Quantity	0.54	excipient quantity		
			should be the float		
			number.		
Normal Flow:	1. The user opens	add new drug reformula			
	•	drug name, excipient na			
	excipient intens	ity and excipient quanti	ty.		
	<ol><li>The user selects</li></ol>	"save" for saving a new	v drug formation into the		
	system.				
		dates the input data.			
	•	es a new drug formulation	•		
	,		ion case successful page.		
Alternative Flow:	In the step 3 of the norn	nal flow, if the user sele	ct "cancel" instead of		
	selecting "save".				

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	1. The system shows the administrator main page.
Evention	
Exception:	<ul> <li>In all of step of the normal flow, if the system disconnects from an internet</li> <li>The system shows the error message about internet disconnection.</li> </ul>
	<ul> <li>In step 4 of the normal flow, if the user input the drug excipient name in a wrong format.</li> <li>The system shows the error message about the drug excipient</li> </ul>
	name format is wrong.  2. The user go back to do the step 2 of the normal flow again.
	<ul> <li>In step 4 of the normal flow, if the user input the drug excipient role in a wrong format.</li> <li>The system shows the error message about the drug excipient</li> </ul>
	role format is wrong.  2. The user go back to do the step 2 of the normal flow again.
	<ul> <li>In step 4 of the normal flow, if the user input the excipient intensity in a wrong format.</li> <li>1. The system shows the error message about the excipient intensity format is wrong.</li> <li>2. The user go back to do the step 2 of the normal flow again.</li> </ul>
	<ul> <li>In step 4 of the normal flow, if the user input the excipient quantity</li> </ul>
	in a wrong format.
	<ol> <li>The system shows the error message about the excipient quantity format is wrong.</li> </ol>
	2. The user go back to do the step 2 of the normal flow again.
	<ul> <li>In step 4 of the normal flow, if the user input the drug name that same as with other drug name in the system.</li> </ul>
	The system shows the error message about the drug name is already used.  The system shows the drug area 2 of the second flowers.
	2. The user go back to do the step 2 of the normal flow again.
	<ul> <li>In step 4 of the normal flow, if the user input the drug name that in the wrong format.</li> <li>The system shows the error message about the drug name is</li> </ul>
	<ol> <li>The system shows the error message about the drug name is wrong format.</li> <li>The user go back to do the step 2 of the normal flow again.</li> </ol>
	2. The age, go back to do the step 2 of the normal now again.
Include:	URS-24

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#### URS 20: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-181	The system provides the Graphic user interface (GUI) which receive the drug name,
	excipient name, excipient role, excipient quantity and excipient intensity.
SRS-182	The system can check the drug name format. The drug name format should be the
	characters.
SRS-183	The system can check the excipient name format. The excipient name format should
	be the characters
SRS-184	The system can check the excipient role format. The excipient role format should be
	the characters.
SRS-185	The system can check the excipient quantity format. The excipient quantity format
	should be the float number.
SRS-186	The system can check the excipient Intensity format. The excipient Intensity format
	should be the float number.
SRS-187	The system save the drug formulation to the system.
SRS-188	The system shall show the successful add a new drug formulation page.
SRS-189	The system shall display the error message "The drug name is not the characters".
SRS-190	The system shall display the error message "The excipient name is not the
	characters".
SRS-191	The system shall display the error message "The excipient role is not the characters".
SRS-192	The system shall display the error message "The excipient quantity is not the float
	number".
SRS-193	The system shall display the error message "The excipient intensity is not the float
	number".
SRS-194	The system shall display the error message "The drug name is already used".
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

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URS-21: The user update an existing drug formulation case in the system.

The user updates an existing drug formulation case in the system.   Create By : Panupak Wichaidit   Last update by : Panupak Wichaidit     Date Created : April 7, 2014   Last Revision Date : May 25, 2014     Actor: Expert Pharmacists, Administrator     Description: URS-21 is used, when the user updates an existing drug reformulation case in the system.	User Requirement Specification ID:	URS-21				
Create By : Panupak Wichaidit   Last update by : Panupak Wichaidit   Date Created : April 7, 2014   Last Revision Date : May 25, 2014	•	The user updates an exi	sting drug formulation	case in the system.		
Date Created: April 7, 2014   Last Revision Date:   May 25, 2014	•			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Actor: Expert Pharmacists, Administrator  Description: URS-21 is used, when the user updates an existing drug reformulation case in the system.  Trigger: The user selects "update an existing drug formulation case" to update an existing case in the system.  Pre-condition:  Post-condition:  Input data  Input Name  Example  Example  Description  Excipient name  talc, croscarmellose sodium, microcrystalline cellulose/colloidal, silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  The list of substance role should be the character.  Excipient Intensity  5.34  The value of a substance Intensity should be the float	Create By:	Panupak Wichaidit	Last update by :	Panupak Wichaidit		
Description:         URS-21 is used, when the user updates an existing drug reformulation case in the system.           Trigger:         The user selects "update an existing drug formulation case" to update an existing case in the system.           Pre-condition:         • The user must log into the system.           Post-condition:         • The system saves the drug reformulation updating into the system.           Input data         Input Name         Example         Description           Excipient name         talc, croscarmellose sodium, microcrystalline cellulose/colloidal, silicon dioxide and magnesium         character.           Excipient Role         Diluent, antiadherent, Libran, disintegrant         The list of substance role should be the character.           Excipient Intensity         5.34         The value of a substance Intensity should be the float	Date Created :	April 7, 2014	Last Revision Date :	May 25, 2014		
in the system.  Trigger: The user selects "update an existing drug formulation case" to update an existing case in the system.  Pre-condition:  The user must log into the system.  Post-condition:  Input data  Input Name  Example  Excipient name  talc, croscarmellose sodium, microcrystalline cellulose/colloidal, silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  5.34  The value of a substance Intensity should be the float						
Trigger: The user selects "update an existing drug formulation case" to update an existing case in the system.  Pre-condition: The user must log into the system.  Post-condition: The system saves the drug reformulation updating into the system.  Input data  Input Name Example Description  Excipient name talc, croscarmellose sodium, microcrystalline cellulose/colloidal, silicon dioxide and magnesium  Excipient Role Diluent, antiadherent, Libran, disintegrant role should be the character.  Excipient Intensity 5.34 The value of a substance Intensity should be the float	Description:		ne user updates an exist	ting drug reformulation case		
existing case in the system.  Pre-condition:  The user must log into the system.  The system saves the drug reformulation updating into the system.  Input data  Input Name Example Description  Excipient name  talc, croscarmellose sodium, microcrystalline character.  cellulose/colloidal, silicon dioxide and magnesium  Excipient Role Diluent, antiadherent, Libran, disintegrant  The list of substance role should be the character.  Excipient Intensity  5.34 The value of a substance Intensity should be the float	Tricas	•		ulatian assall to undata an		
Pre-condition:  • The user must log into the system.  • The system saves the drug reformulation updating into the system.  Input data  Input Name  Example  Description  Excipient name  talc, croscarmellose sodium, microcrystalline character.  cellulose/colloidal, silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  5.34  The value of a substance Intensity should be the float	i rigger:			ulation case" to update an		
Post-condition:  Input data Input Name Example Excipient name  Excipient name  Excipient Role  Excipient Role  Excipient Intensity  Social Application and a substance of a	Pre-condition:					
Input data    Input Name   Example   Description						
Excipient name  talc, croscarmellose sodium, should be the character.  cellulose/colloidal, silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  5.34  The list of substance role should be the character.  The list of substance role should be the character.  The value of a substance Intensity should be the float		,				
sodium, microcrystalline cellulose/colloidal, silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  5.34  The list of substance role should be the character.  The value of a substance Intensity should be the float	pat aata	•	•	-		
cellulose/colloidal, silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Character.  Excipient Intensity  5.34  The value of a substance Intensity should be the float						
silicon dioxide and magnesium  Excipient Role  Diluent, antiadherent, Libran, disintegrant  Control of the character of the value of a substance Intensity should be the float			microcrystalline	character.		
Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  The list of substance role should be the character.  The value of a substance Intensity should be the float			cellulose/colloidal,			
Excipient Role  Diluent, antiadherent, Libran, disintegrant  Excipient Intensity  The list of substance role should be the character.  The value of a substance Intensity should be the float			silicon dioxide and			
Libran, disintegrant role should be the character.  Excipient Intensity 5.34 The value of a substance Intensity should be the float						
Excipient Intensity  5.34  The value of a substance Intensity should be the float		Excipient Role		,		
Excipient Intensity 5.34 The value of a substance Intensity should be the float			Libran, disintegrant			
substance Intensity should be the float		Eveinient Intensity	E 24			
should be the float		Exciplent intensity	3.34			
				· I		
numper				number		
Excipient Quantity 4.55 The value of a		Excipient Quantity	4.55	The value of a		
substance quantity				· · · · · · · · · · · · · · · · · · ·		
should be the float						
number		4 71				
Normal Flow: 1. The user opens the drug reformulation updating page. 2. The user selects an existing drug reformulation from a list for	Normal Flow:		•	, -, -		
updating.			is all existing ulug le	TOTTICIALION TOTTI A TISC TOT		
3. The user inputs a new data for updating such as excipient name,			s a new data for updat	ing such as excipient name.		
excipient role, excipient intensity and excipient quantity.		•	·	- ' '		
4. The user selects "confirm to update" for update an existing drug		4. The user select	s "confirm to update"	for update an existing drug		
reformulation.						
5. The system validates the input data.			•			
6. The system update the existing drug formulation.						
7. The system shows the existing drug reformulation updating				ug reformulation updating		
successful page.  Alternative Flow:  In step 2 of the normal flow, if the user uses search bar for searching	Alternative Flows			uses search har for searching		
the existing drug formulation by the drug's name instead of	Aiternative Flow.			- 1		
selecting the existing drug formulation in a list.			-	_		
The user inputs the drug name in a search bar.	i	_				

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2. The user selects "searching" for searching the existing drug formulation in the system. 3. The system shows the drug formulation. 4. The step of this use case is resumed at step 3 of the normal flow. In the step 3 of the normal flow, if the user select "cancel" instead of selecting "confirm to update". 1. The system shows the administrator main page. **Exception:** In all of step of the normal flow, if the system disconnects from an internet 1. The system shows the error message about internet disconnection. In step 5 of the normal flow, if the user inputs the drug excipient name in a wrong format. 1. The system shows the error message about the drug excipient name format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 5 of the normal flow, if the user inputs the drug excipient role in a wrong format. 1. The system shows the error message about the excipient role format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 5 of the normal flow, if the user inputs the excipient intensity in a wrong format. 1. The system shows the error message about the excipient Intensity format is wrong. 2. The user go back to do the step 2 of the normal flow again. In step 5 of the normal flow, if the user inputs the excipient quantity in a wrong format. 1. The system shows the error message about the excipient quantity format is wrong. 2. The user go back to do the step 2 of the normal flow again Include: URS-24

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URS 21: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-195	The system provides the Graphic user interface (GUI) which receive excipient name,
	excipient role, excipient quantity, excipient intensity.
SRS-196	The system shows the list of drug formulation.
SRS-197	The system provides the search bar for searching the list of drug formulation. The
	search bar uses the name of drug for searching.
SRS-183	The system can check the substance type format. The excipient name format should
	be the characters.
SRS-184	The system can check the substance role format. The excipient role format should be
	the characters.
SRS-185	The system can check the substance quantity format. The excipient quantity format
	should be the float number.
SRS-186	The system can check the substance Intensity format. The excipient intensity format
	should be the float number.
SRS-198	The system update drug formation that selected by the administrator.
SRS-199	The system shall show the successful update existing drug formulation case page.
SRS-190	The system shall display the error message "The excipient name is not the
	characters".
SRS-191	The system shall display the error message "The excipient role is not the characters".
SRS-192	The system shall display the error message "The excipient quantity is not the float
	number".
SRS-193	The system shall display the error message "The excipient intensity is not the float
	number".
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

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URS-22: The user deletes an existing drug formulation case in the system.

Description						
User Requirement Specification ID:	URS-22					
User Requirement	The user deletes an exis	ting drug formulation case	in the system			
Specification Name:	The user defetes arrexis	ting drug formalation case	in the system.			
Create By:	Panupak Wichaidit	Last update by: Pa	nupak Wichaidit			
Date Created :	April 7, 2014		oril 7, 2014			
Actor:	Expert Pharmacists, Adr		·			
Description:	•	e user wants to delete the	existing drug formulation			
	case from the system.					
Trigger:		e the existing drug formu	ulation" to delete a drug			
11188011	formulation case from t		ination to delete a drug			
Pre-condition:		og into the system.				
		•	ulatian form the souten			
Post-condition:	•	tes the existing drug form	1			
Input data	Input name	Example	Description			
	Drug formulation's	"Lexapro"	The drug formulation's			
	name		name should be the			
			characters.			
Normal Flow:	1. The user opens	the existing drug formulati	on deleting page.			
		the drug name from the li				
	<ol><li>The user selects</li></ol>	"delete" for delete the e	existing formulation from			
	the system.					
	4. The system shows the alert message for checking the drug					
	substance deleting.					
	5. The administrator selects "Yes" for confirming to delete the drug					
	formulation.	· · · · · · · · · · · · · · · · · · ·				
		tes the existing drug form	ulation form the system.			
		ws the existing drug formu	-			
	page.		B			
Alternative Flow:		the normal flow, if the use	r selects "cancel" instead			
7.1.00.11.00.11	of selecting "Yes	• In the step 3 of the normal flow, if the user selects "cancel" instead				
	_	, . shows the administrator m	nain nage			
	1. The system	snows the dammistrator in	iam page.			
	• In stan 2 of the	normal flow, if the user use	as search har for			
	•	isting drug formulation by				
		existing drug formulation i	-			
	_	outs the drug name in a sea				
	-	ects "searching" for search				
		in the system.	iilig tile existilig ulug			
			n			
	I	shows the drug formulatio				
	•	this use case is resume at a	a step 3 of the normal			
	flow.					
Fucantia	a la all after of	the newsel flam (C.).	tono diocomo esta Como			
Exception:	-	the normal flow, if the sys	tem disconnects from an			
	internet	a alaanna Ohr				
	•	n shows the error m	essage about internet			
, , ,	disconnection	on.				
Include:	URS-24					

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## URS 22: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-196	The system shows the list of drug formulation.
SRS-197	The system provides the search bar for searching the list of drug formulation. The
	search bar use the name of drug for searching.
SRS-200	The system shows the Confirm dialog box (YES/NO option). For making confirm when
	the administrator want to delete the existing drug formulation.
SRS-201	The system deletes the drug formulation from the system.
SRS-202	The system shall show the successful delete existing drug formulation case page.
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

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## URS-23: The user views all of the formulation in the system.

## Description

User Requirement	URS-19					
Specification ID:	ONS 15					
User Requirement	The user views all the fo	rmulation in the systen	n.			
Specification Name:						
Create By:	Panupak Wichaidit	Last update by:	Panupak Wichaidit			
Date Created :	April 2, 2014	Last Revision Date:	April 2, 2014			
Actor:	General Pharmacists, Ex	pert Pharmacists, Adm	inistrator			
Description:	URS-23 is used, when th	e user wants to view th	ne formulation of a drug.			
Trigger:	The user selects "view t	he formulation" to view	v the formulation of the			
	drug.					
Pre-condition:	The user must lo	og into the system.				
Post-condition:	• N/A					
Normal Flow:	1. The user opens	the viewing drug formu	ılation page.			
	2. The system show	,				
	3. The user selects the name of drug formulation that they want to see					
	a detail.					
	4. The system show	ws a detail of the histor	ry that the user selected.			
Alternative Flow:	<ul> <li>In step 3 of the r</li> </ul>	normal flow, if the user	uses search bar for searching			
	the formulation	by name instead of se	electing the formulation in a			
	list.					
		outs the name into the				
	2. The user so	elects "submit" for se	arching the formulation by			
	name.					
		shows the list of formu				
Exception:	· ·	the normal flow, if the	system disconnects from an			
	internet.					
	· ·		message about internet			
	disconnection	on.				
Include:	URS-24					

## URS 23: System requirement specification (SRS)

No	System requirement specification (SRS)				
SRS-196	The system shows the list of drug formulation.				
SRS-197	The system provides the search bar for searching the drug formulation. The search bar				
	uses the name of formulation to searching.				
SRS-203	The system shows the detail of the formulation. The substance the drug name,				
	substance type, substance role, Substance Quantity, Substance Intensity.				
SRS-12	The system shall display the error message "The system is disconnect from the				
	internet".				

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URS-24: The user log in to the system.

User Requirement	URS-24				
Specification ID:	UN3-24				
User Requirement	The user log in to the system.				
Specification		The user log in to the system.			
Name:					
Create By:	Panupak Wichaidit	Last update by: Pa	nupak Wichaidit		
Date Created :	April 1, 2014	Last Revision Date: A	pril 1, 2014		
Actor:	General Pharmacists, E	Expert Pharmacists, Administr	ator		
Description:	URS-24 is used, when t	the user wants to use the OEG	SP.		
Trigger:	The user selects "login	" to log in to the system.			
Pre-condition:	<ul> <li>The user has b</li> </ul>	een register as a member.			
Post-condition:	The system say	ves a member history in a syst	tem.		
Input data	Input Name	Example	Description		
	Email	"member01@gmail.com"	Username of the user		
			should have length 4-		
			15 characters		
	Password	"password01"	Password of the user		
			should have length 4-		
			15 characters		
Normal Flow:	1. The user open	1. The user opens login page.			
	· ·	2. The user inputs email and password for login into a system.			
	3. The user selects a login symbol for log in to the system				
		4. The system shows main page of the program.			
Alternative Flow:	N/A				
Exception:	·	e normal flow, if the user inpu	it the email or password		
	wrong.				
	-	ows the error message about	the email or password is		
	wrong.		_		
	2. The user go ba	ack to do step 2 of the normal	flow again.		
	a In all of stan of the normal flow if the system disconnects from an				
	In all of step of the normal flow, if the system disconnects from an internet				
	internet  1. The system shows the error message about internet				
	<ol> <li>The system shows the error message about internet disconnection.</li> </ol>				
	disconnection				
Include:	URS-01				
	1				

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URS 24: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-204	The system provides the Graphic user interface (GUI) which receive email and
	password for logging in to the system.
SRS-205	The system retrieves the email and password.
SRS-206	The system can verify the email and password.
SRS-207	The system retrieves the user information from the username.
SRS-208	The system stores the user information as the current user.
SRS-209	The system shows the main page of the program.
SRS-210	The system shall display the error message "The username or password is invalid"
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

#### Use case10: Logout from the system

## URS-25: The user logouts from the system.

#### Description

	LIDC 24			
User Requirement	URS-24			
Specification ID:				
User Requirement	The user logouts from the system.			
<b>Specification Name:</b>				
Create By:	Panupak Wichaidit	Panupak Wichaidit Last update by : Panupak Wichaidit		
Date Created :	April 1, 2014	Last Revision Date :	April 1, 2014	
Actor:	General Pharmacists, Expert Pharmacists, Administrator			
Description:	URS-24 is used, when the user want to log out from the OEGP.			
Trigger:	The user select "log out" to log out from the system.			
Pre-condition:	N/A			
Post-condition:	N/A			
Normal Flow:	The user selects the log out symbols.			
	2. The system shows log in page after the log out is successful.			
Alternative Flow:	N/A			
Exception:	In all of step of the normal flow, if the system disconnects from an			
	internet			
	1. The syst	em shows the error	message about internet	
	disconnection.			
Include:	URS-24			

#### URS 25: System requirement specification (SRS)

No	System requirement specification (SRS)
SRS-211	The system provides the Graphic user interface (GUI) which show the log out symbols
SRS-212	The system shall shows the successful member log out.
SRS-12	The system shall display the error message "The system is disconnect from the
	internet".

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