



SKIPAL: The Incorporation of Machine Learning Technology into the Strategic Knowledge Integration Web

SPAWARSYSCEN Pacific

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Personalized Assistant that Learns (PAL)

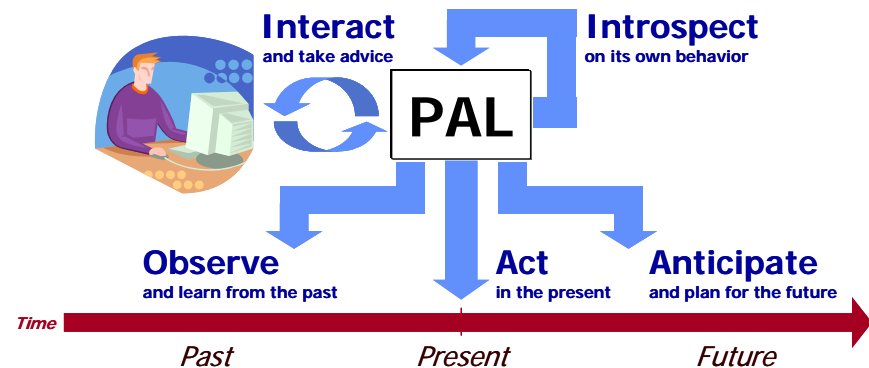


▼ Virtual assistant that learns

- Learns on the job
 - by observing the user's actions
 - by responding to the user's advice
- Learns the user's activities, roles, topics, and preferences
- Learns to perform new tasks
- Learns to anticipate the user's information needs

• Software systems that adapt

- Adapt to different users
- Adapt to different missions
- Adapt to changing situations
- Adapt without reprogramming



SKIPAL Spiral 2.5

Recommendations | All Active Events | Summary | **Q & A** | My Event Log

SKIPAL Recommended Events

Displaying both real-world and exercise events.

Results 1 - 30 of about 113

1 2 3 4 Next

Table view: Normal Compact

Date	Title	Blog	Question	Categories	Score	
281437Z Apr 2009	(U) 9 Pirate Suspects Arrested	empt		Piracy	0.978	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: GAPS SKIWeb II News Injector						
282117Z Apr 2009	(U//FOUO) Warning Sensor Initiated Event			---	0.920	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: John D Boltons						
291553Z Apr 2009	(U) NPR Topics: News : U.S. GDP Shrinks At 6.1 Percent Pace In 1st Quart			Economy	0.915	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: NPR Topics: News						
291553Z Apr 2009	(U) NPR Topics: News : Holder: 30 Guantanamo Detainees Ready To Move			---	0.914	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: NPR Topics: News						
291625Z Apr 2009	(U) Breaking News: CBSNews.com : A History Of The Senate Switcheroo			---	0.910	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: Breaking News: CBSNews.com						
281647Z Apr 2009	(U) Cult Head Child Rapist Escapes Island Jail on Chopper			Crime	0.895	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: GAPS SKIWeb II News Injector						
281530Z Apr 2009	(U) Cancer Girl's Fundraiser Letter Ignored by 384 Politicians			---	0.884	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: GAPS SKIWeb II News Injector						
280145Z Apr 2009	(U) Paraguayans glued to presidential paternity scandal			---	0.871	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: GAPS SKIWeb II News Injector						
051255Z Mar 2009	(U) ECB cuts key rate a half-point (AP)	[1 blog]	[4 questions]	Economy	0.866	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Participants: GAPS SKIWeb II News Injector						

Question & Answer Tab

User Feedback

Event Category

User Specific My Recommendation Event Score

Answered Question

SKIPAL Decorated Event

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Add Blog

Copy to New Event

Copy to New Related Event

Relate This Event to Another Event

Add To Critical List(s)

Add to My Event Log

Email Event

Read By

Ask Question

View Questions and Answers

Help

BBC News | News Front Page | World Edition : UK to see 'more' swine flu cases

301202Z Apr 2009 BBC News | News Front Page | World Edition

(U) Britain will see "many, many more cases" of swine flu but most people will recover, a chief government adviser says.

Impact: ● Little/No Impact to Mission Success

Links: [Click Here for Full Story](#) UK to see 'more' swine flu cases

 302153Z Apr 2009 **SKIPAL**

(U) Michael Carlin asked the following question:
Is it time to start panicing???

Ken Nitz gave the following answer:
yes

Updated: 302153Z Apr 2009

Expiration: 012153Z May 2009


Event Entered: 301202Z Apr 2009

Event Date: 301202Z Apr 2009

Event Category


Health

[Recategorize Event](#)

Similar Events 

- [042002Z May 2009](#) (U) BBC News | News Front Page | World Edition : Nine more UK cases of swine flu
- [280402Z Apr 2009](#) (U) BBC News | News Front Page | World Edition : Swine flu prompts travel warning
- [300402Z Apr 2009](#) (U) BBC News | News Front Page | World Edition : Three new swine flu cases in UK
- [291202Z Apr 2009](#) (U) BBC News | News Front Page | World Edition : Three new swine flu cases in UK
- [272002Z Apr 2009](#) (U) BBC News | News Front Page | World Edition : Swine flu cases confirmed in UK

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Suggested Contributors 

- [Mr CIV Michael Carlin](#) (COMM (P): 619-553-4681)
- [CIV Ryne Hobbs](#) (DSN (P): 402-555-1212)
- [Hari Seldon](#) (COMM (P): 123-456-7890)
- [Mr KTR Skiweb Tester](#) (COMM (P): 123-4567)
- [Edward Lai](#) (DSN (P): 619-553-5209)

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Summary Pages based on Category

UNCLASSIFIED [Update Profile](#)

Maj Frank Gas's SKIPAL

Recommendations All Active Events Summary Q & A My Event Log

SKIPAL Daily Summary

[Collapse all](#) [Expand all](#)

- ▼ **Afghanistan Events (2)**
 - 100746Z Mar 2009 (U) Pakistan tribe agrees to hand over Taliban
 - 090730Z Mar 2009 (U) Pakistani Troops Kill 15 Militants in Northwest
- ▼ **Africa Events (6)**
 - 100947Z Mar 2009 (U) UN tries to fill gaps left by Darfur aid expulsion
 - 100944Z Mar 2009 (U) Sudan weighs options over quashing war crime warrant
 - 100557Z Mar 2009 (U) Four peacekeepers wounded in Darfur attack
 - 091723Z Mar 2009 (U) Zimbabwe Prime Minister: Car Crash Was Accident
 - 091630Z Mar 2009 (U) Sudan Frees President's Top Opponent
 - 091457Z Mar 2009 (U) Plane Crashes Into Uganda's Lake Victoria Killing 11
- ▼ **Asia Events (1)**
 - 100936Z Mar 2009 (U) Sri Lanka bombing kills 10, wounds cabinet minister
- ▼ **Business Events (0)**

NSTR
- ▼ **China Events (7)**
 - 101149Z Mar 2009 (U) U.S. declines to sell F-16 fighter jets to Taiwan: MP (Reuters)
 - 101054Z Mar 2009 (U) Dalai Lama blasts 'brutal crackdown' in Tibet
 - 101042Z Mar 2009 (U) Pro-Tibetan rallies mark anniversary of uprising
 - 100908Z Mar 2009 (U) Dalai Lama demands Tibet autonomy, mourns past
 - 100832Z Mar 2009 (U) China says U.S. naval ship broke the law
 - 091840Z Mar 2009 (U) Dalai Lama to demand Tibet autonomy, mourn past

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Maj Frank Gas's SKIPAL

SKIPAL Answers

Your question:

* Question:

3961 characters left

About the event:
301202Z Apr 2009 (U) BBC News | News Front Page | World Edition : UK to see 'more' swine flu cases [1 blog]

Related results from the QA repository

Is there a connection between ozone levels and swine flu?
There may be a climate change link

Community Experts (excluding yourself)
Community Experts who are not SKIPAL users will be italicized and disabled.

- Mr Michael Carlin
- GS-12 Ken c Nitz Capt.
- Data Steward

You may instead [forward this question](#) to other peers.

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Maj Frank Gas's SKIPAL

Forward a Question to other SKIPAL Users

Forward the following question:
How long will it take to get through this traffic?

About the following event:
160600Z Apr 2009 (U) I-15 SOUTHBOUND; JAMFACTOR 0.8

To the following users:

SKIPAL A.I.
Joe Blow
Michael Carlin
Mr Skiweb Tester
Edward Lai
Mr Traffic Boy
Data Steward

Select recipients:

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Maj Frank Gas's SKIPAL

Questions

About the following event
301202Z Apr 2009 (U) BBC News | News Front Page | World Edition : UK to see 'more' swine flu cases [1 blog]

Date Asked	Question	Asked By	Action
301523Z Apr 2009	Is it time to start panicing???	Michael Carlin CIV SPAWARSYSSEN	1 answer this question.

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And Answers

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Maj Frank Gas's SKIPAL

View Answers to a Question

Joe Politics KTR zzzz

asked the following question:

How high will oil prices rise?

about the following event:

092021Z Mar 2009 (U) Yahoo! News: Science News : Iraq: Minister says OPEC aims to raise oil prices (AP)

[Answer this question.](#)

Answers (1)

2009-03-12
23:09:59.27

The price of gas will be \$4 per gallon by this summer.

Frank Gas
USSTRATCOM/J012

Survey Screen

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SKIPAL Survey

Please take a moment to complete this brief survey. Your response will help SKIPAL tailor its recommendations to your interests.

You will be redirected to the *Recommendations* page upon completion of the survey.

Is the event below relevant to your interests? Yes No

SKIPAL believes the event below belongs to the following Space Ops categories:

Has SKIPAL categorized the event correctly? Yes No

If incorrect, please select all the correct categories:
You may select up to 3 event categories by holding down the *SHIFT* or *CTRL* key.

- Afghanistan
- Africa
- Asia
- Business
- China
- Congo
- Crime
- Disaster
- Economy
- Entertainment

Predicted Conjunction Between ORBCOMM FM19 vs FENGYUN 1C DEB 10/1244Z Mar 09 (Miss Distance is Now 0.1 KM)

101244Z Mar 2009 GAPS SOCRATES

(U) There is a predicted Conjunction between ORBCOMM FM19 and FENGYUN 1C DEB on 10/1244Z Mar 09 with a minimum range of 0.1.

Impact: ● Moderate Impact to Mission Success

Links: [Conjunction Details](#)

Keywords: Conjunction , Satellite , GAPS , ProLogic

Expiration: 111244Z Mar 2009

Event Entered: 100501Z Mar 2009

Event Date: 101244Z Mar 2009

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Metrics

$$\text{normalized position} = \left\lfloor \frac{\text{position}}{\text{total number of active events}} \times 100 \right\rfloor + 1.$$

Confusion Matrix for a Given Threshold

	Relevant to the user	Not relevant to the user
Classified as relevant	$a = \# \text{ of } TPs$	$b = \# \text{ of } FPs$
Classified as not relevant	$c = \# \text{ of } FNs$	$d = \# \text{ of } TNs$

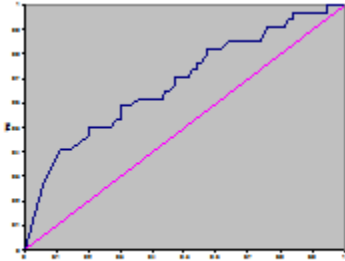
$$TPR \approx \frac{a}{a + c}$$

$$FPR \approx \frac{b}{b + d}$$

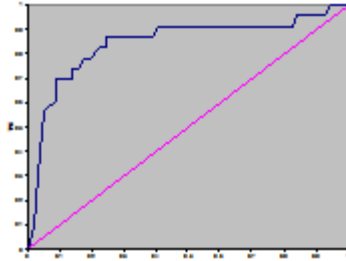
$$\text{Recall} = TPR$$

$$\text{Precision} \approx \frac{a}{a + b}$$

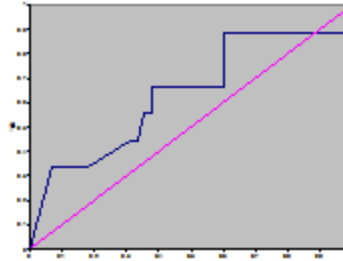
Sample ROC Curves



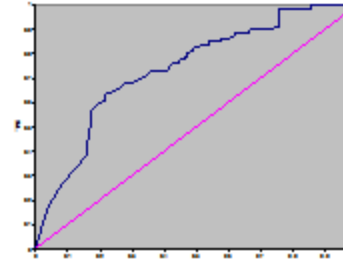
1480



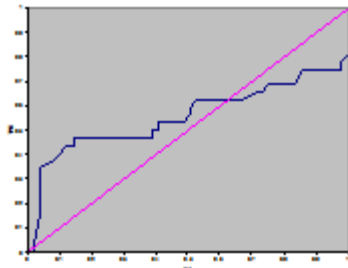
1691



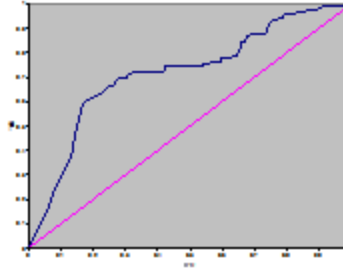
2004



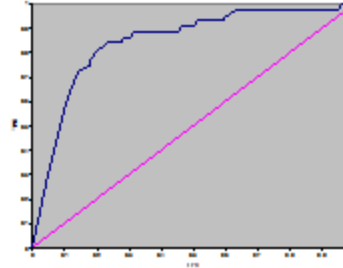
2250



2372



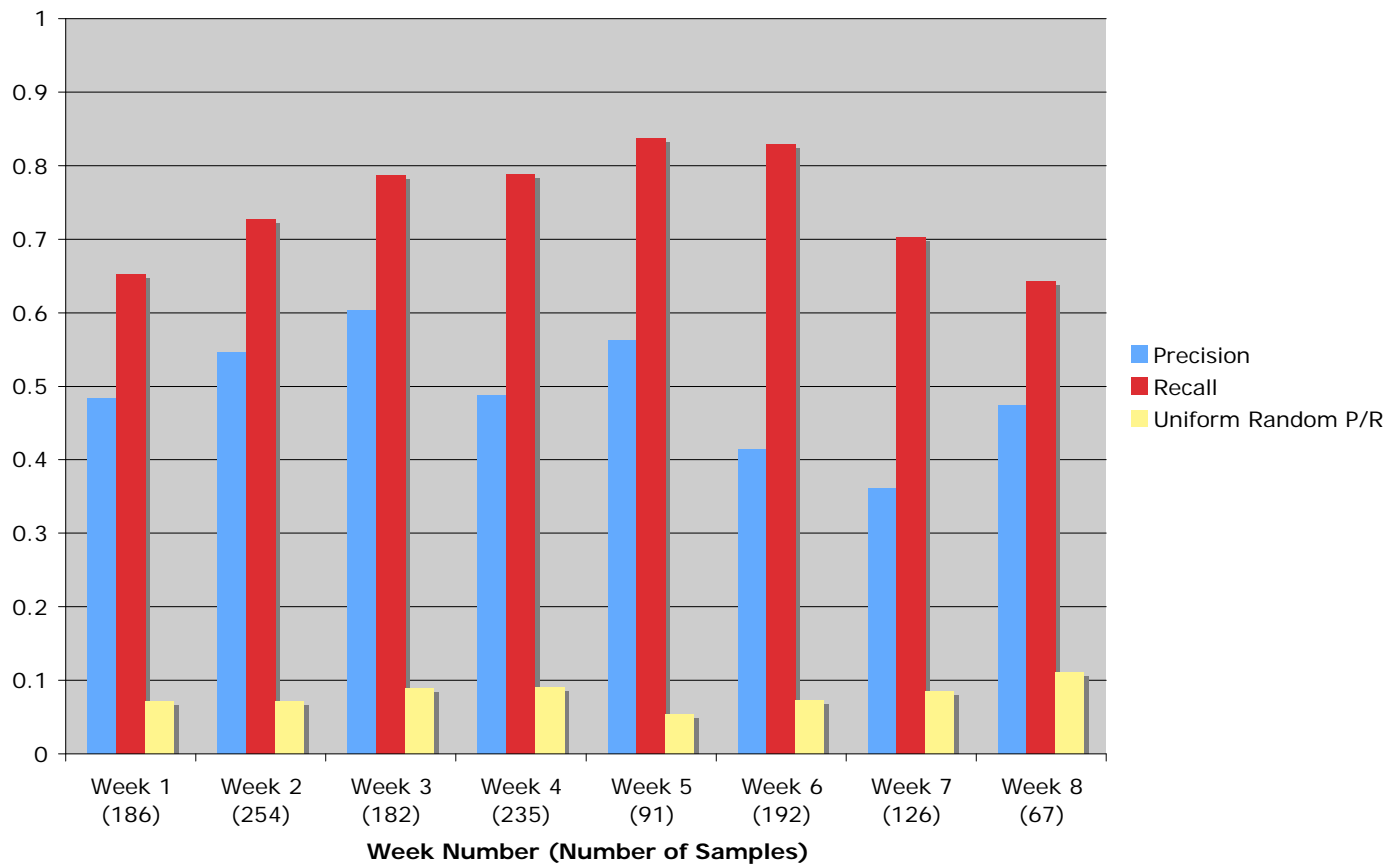
6070



6110

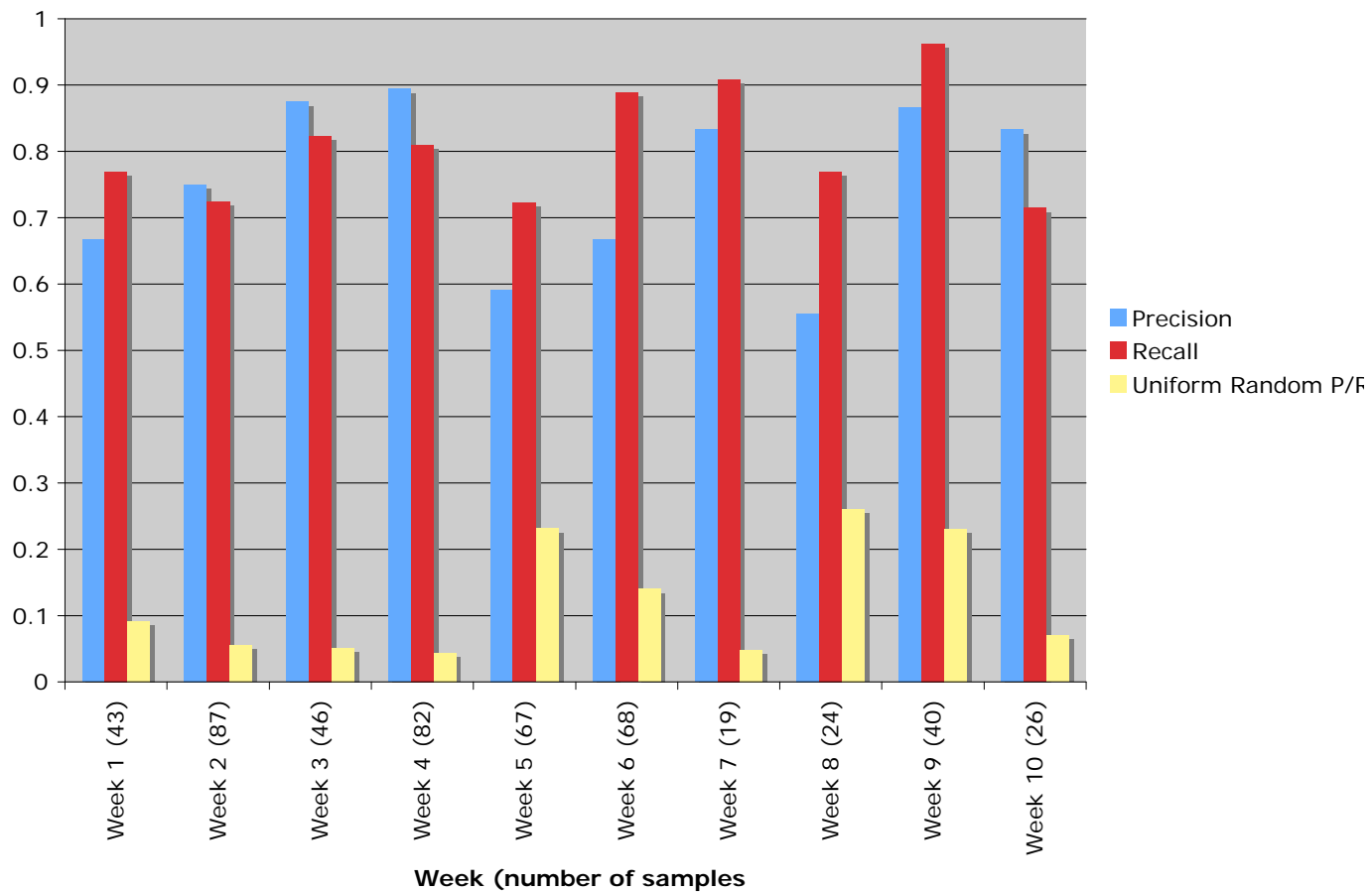
Max Recommendations Scheme Results

Max Recommendations Scheme: Samples Precision and Recall



Score Threshold Scheme Results

Score Threshold Scheme: Sampled Precision and Rec





PAL Enhanced ISPAN GAP CIE

Strategy ▾ Contingency Planning ▾ Future Operations ▾ Current Operations ▾ Links ▾

ISPAN Search

Plans ▾ Near Term Planning ▾ Effects Integration and Strategic Assessment ▾ Mission Analysis ▾ COA Development ▾ CDR Estimates ▾ SecDef ▾ Detailed Planning Execution ▾ Target Analysis ▾

Pal Recommends: NK Plan Development: Portlet Content

WED 17:37:52
WED 23:37:52
THU 2:37:52
THU 11:37:52
WED 1:37:52
WED 15:37:52
WED 16:37:52
WED 17:37:52
WED 18:37:52

Local Time GMT (Zulu Time) Kuwait (+3) Japan/ Korea (+9) Hawaii (-10) Pacific (-8) Mountain (-7) Central (-6) Eastern (-5)

Events				
Title	Score	AOR	Date	Feedback
(U) U.S. ready for possible N.K. attack ISPAN: Defense Plan Event	.95	STRATCOM	01JUL09	
(U) Air Defense ready for possible N.K. attack ISPAN: Air Defense Event	.85	U.S. Air Force	28JUN09	
(U) NATO ready for defense collaboration ISPAN: NATO Event	.79	NATO	24JUN09	

Documents				
Name	Score	AOR	Date	Feedback
(U) N.K. Missile Description	.95	Pentagon	15Jul09	
(U) N.K. Missile Analysis	.90	Pentagon	01Jul09	

Format Guides				
Name	Score	AOR	Date	Feedback
(U) Missile Plan	.95	STRATCOM	15Jul08	

Links				
Name	Score	Date	Feedback	
(U) Link 29DCO	.88	01Jul09		

Images			
Title	Score	Date	Feedback
N.K. Missile Launch 1	.90	26JUN09	
N.K. Missile Launch 2	.90	24JUN09	
N.K. Missile Facility Area	.89	23JUN09	
N.K. ship	.86	22JUN09	
N.K.	.82	12JUN09	

Subject Matter Experts				
POC	Score	AOR	Speciality	Feedback
Sean Juliano	.90	PENTAGON	NK Intel	
Frank Smith	.90	STRATCOM	NK Intel	

Tools			
Name	Score	Description	Feedback
GSAT	.90	NK Tests Missiles	
DIRS	.90	Missile Test	