UNIVERSITY OF TRENTO - Italy
Information Engineering
and Computer Science Department

Logging, Monitoring and Evalutation

Tools

CASA Project

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Logging, Monitoring and Evalutation Tools

These tools have these features:

- recording what machine understood and also full recording of conversation, these are used to find comprehension errors for the ASR;
- browsing tool supporting the dialogs database indexed by (application, date, time, duration);
- transcription/annotation: for every turn dialog it's possible to made annotation;
- dialog trace visualization: concept, utterance, interpretation, confidence, bargein status, grammar used, transcription etc. for each turn, and information about events (nomatch, noinput, hangup), action's information and information about the IVR logs;
- create XML data set of all dialogs information that are relevant for statistics;
- dialogs evaluation:
  - Concepts Statistics: for each concept we report its occurrences, percentages, confidence average and histograms on the confidence scores.
  - Dialog Statistics: we made with an automatic analysis on the applications goals, on the strategy the user follows to achieve the goal and we recognize what appended when no goals are achieved;
  - Query design and visualization: is possible create XPATH queries based on XML data set and save them.

Calls selection (application, date, time, duration, annotator);

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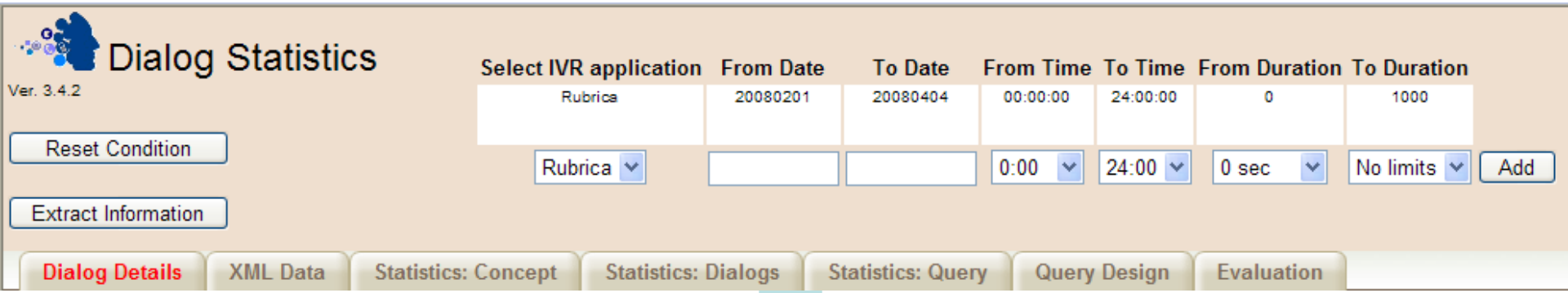

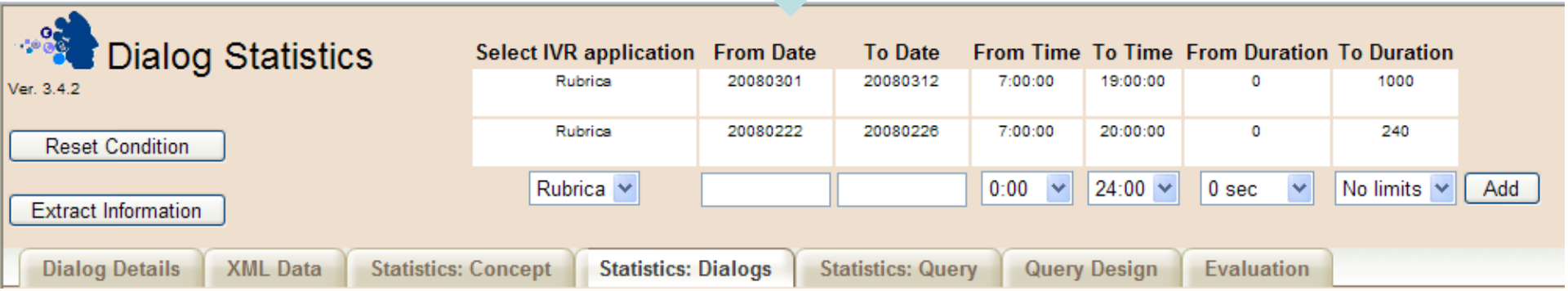

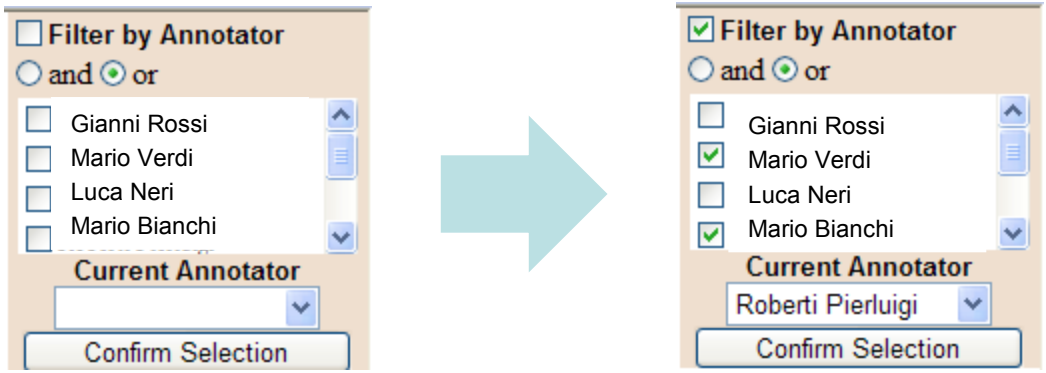

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Results for the previous calls selections

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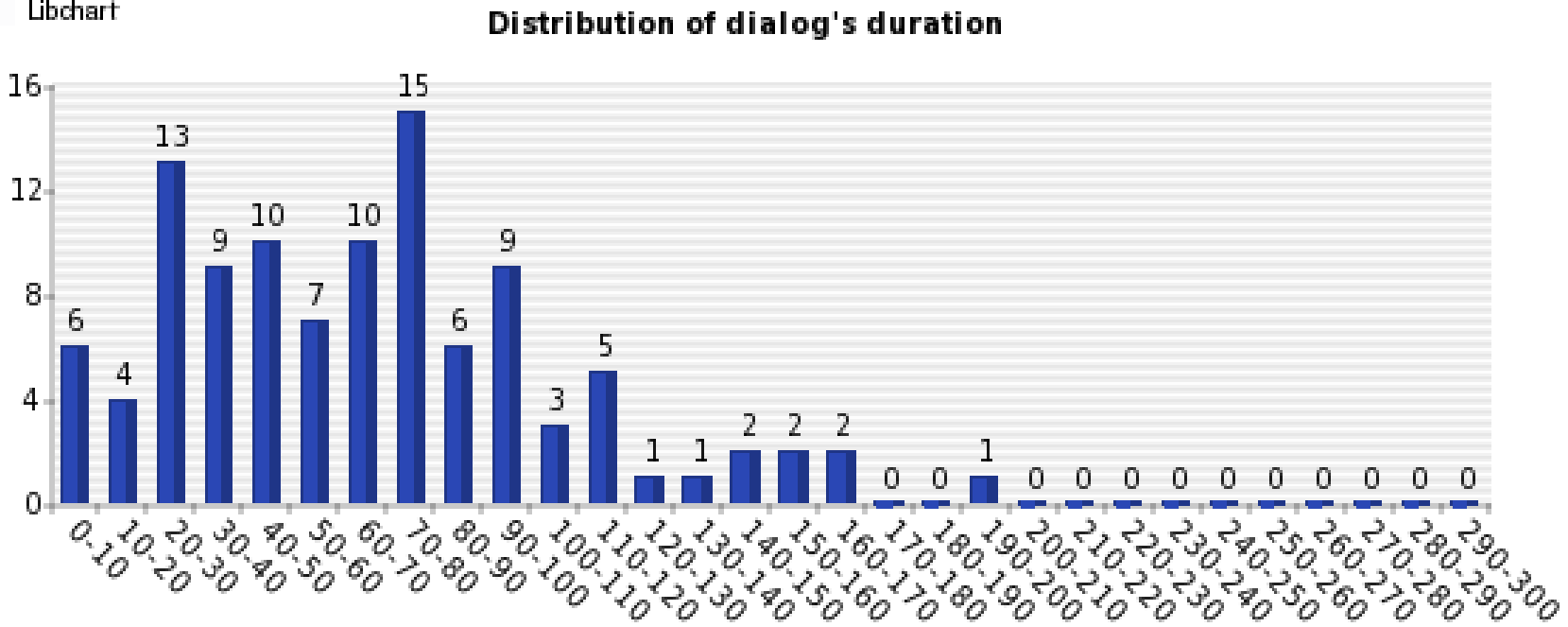
[Selection0] Name Application: **Rubrica**
Date From: **20080301** To: **20080312**
Time From: **7:00:00** To: **19:00:00**
Duration From: **0** sec To: **1000** sec
Number Dialogs analyzed: **53**

[Selection1] Name Application: **Rubrica**
Date From: **20080222** To: **20080226**
Time From: **7:00:00** To: **20:00:00**
Duration From: **0** sec To: **240** sec
Number Dialogs analyzed: **53**

Total Number Dialogs analyzed: **106**

Powered by Libchart



Results for the previous calls selections

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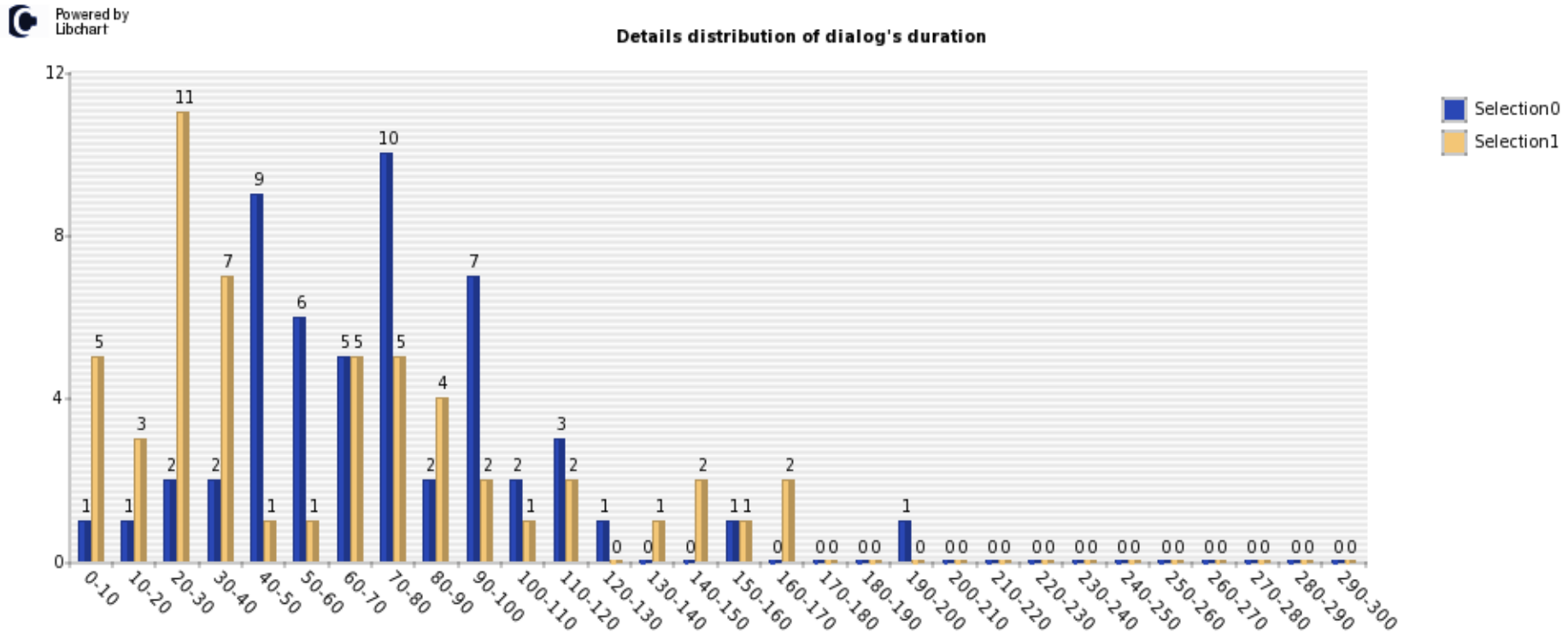

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Browsing tool supporting the dialogs database indexed by (application, date, time, duration);

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[Selection1] Application name: **Rubrica**
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Duration From: **0** sec To: **240** sec
Number Dialogs analyzed: **53**

Print List

NUMBER OF RECORDINGS: **106**

#	Sel.	Data	Time	Voxnauta DialogID	Asterisk RecordingID	Duration (sec)		
1	0	20080310	08:59:46	1205135985-130	1205135979.2614 USER-IVR[IN] USER-IVR[OUT] USER-IVR[MIX]	96		
2	0	20080310	08:58:16	1205135895-129	1205135889.2612 USER-IVR[IN] USER-IVR[OUT] USER-IVR[MIX]	78		
3	0	20080310	08:56:40	1205135799-128	1205135793.2610 USER-IVR[IN] USER-IVR[OUT] USER-IVR[MIX]	76		
4	0	20080310	08:55:17	1205135716-127	1205135711.2608 USER-IVR[IN] USER-IVR[OUT] USER-IVR[MIX]	69		

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Dialog trace visualization: concept, utterance, interpretation, confidence, bargein status, grammar used, transcription etc. for each turn, and information about events (nomatch, noinput, hangup), action's information and information about the IVR logs

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Data	Time	Voxnauta DialogID	Asterisk RecordingID	Duration (sec)	Print Page / Save Page
20080309	13:19:31	1205065170-123	1205065163.2600 USER-IVR[IN] USER-IVR[OUT] USER-IVR[MIX]	113	Dialog annotated [Udo Kalu] 20080310 12:19:24

Questo e' il centralino dell'universita' di Trento! La telefonata potrebbe essere registrata per migliorare il servizio offerto. Il trattamento dei dati raccolti e' effettuato nel rispetto della normativa sulla pra'ivasi

TURN - StartTime	Event	Task/Action	Grammar	
1 - 13:19:31		initial/Start	GrammarVuota_it-IT.grxml	
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank

Buongiorno sono Luisa, con chi desidera parlare?

AL PCM

[Udo Kalu] 20080310 12:34:56 [Udo Kalu] 20080402 16:04:10 [Transcription]voglio parlare con #Massimo Gennara# per favore [Task requested by user]Talk to a person [Transcription]voglio parlare con Massimo Gennara per favore [Task requested by user]Talk to a person

TURN - StartTime	Event	Task/Action	Grammar	
2 - 13:19:42		initial/AskPerson	GrammarNomi_it-IT	
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank
Person_NameSurname	Kolarik	Jan_Kolarik	0.71108	1
Concept Name	Concept Value		Source	Confidence
Person_NameSurname	Jan_Kolarik		voice	0.71108

Sto' cercando il telefono di Jan_Kolarik .

TURN - StartTime	Event	Task/Action	Grammar	
3 - 13:19:51		AddressBook/DoVerifyPerson		
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank
Concept Name	Concept Value		Source	Confidence
Person_Name	Jan		DataBase	0
Person_Surname	Kolarik		DataBase	0
Person_PersonOK	si		DataBase	0

Mi dispiace non ho in memoria il numero di Kolarik Jan .
[Udo Kalu] 20080402 16:05:24 [Task completed by system]Talk to a person - [TaskCorrect]no

TURN - StartTime	Event	Task/Action	Grammar	
4 - 13:19:52		AddressBook/DoReadNumber	GrammarVuota_it-IT.grxml	
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank

Dialog trace visualization for the dialog annotation and transcription

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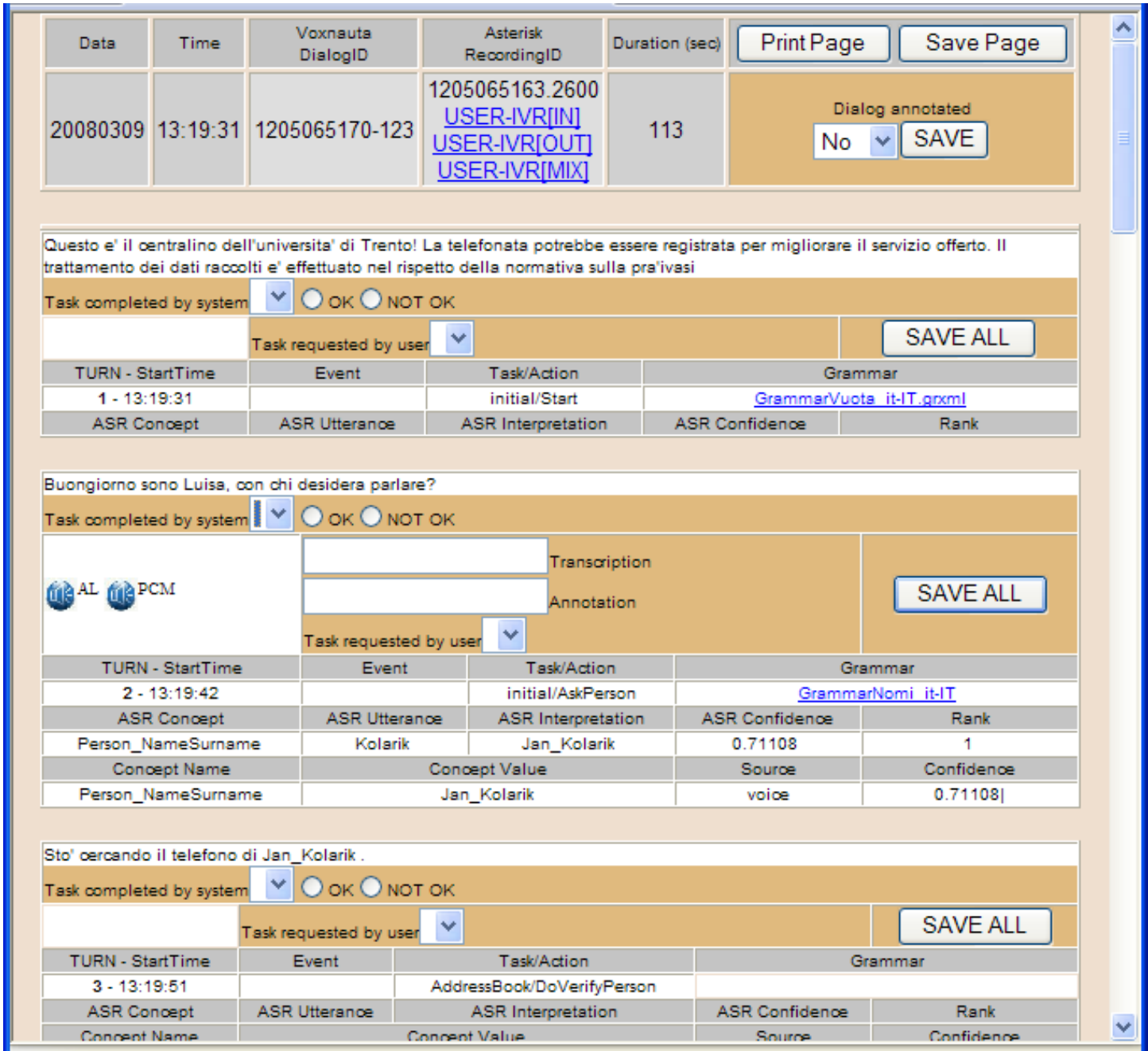

Data	Time	Voxnauta DialogID	Asterisk RecordingID	Duration (sec)	Print Page / Save Page
20080309	13:19:31	1205065170-123	1205065163.2600 USER-IVR[IN] USER-IVR[OUT] USER-IVR[MIX]	113	Dialog annotated: No SAVE

Questo e' il centralino dell'universita' di Trento! La telefonata potrebbe essere registrata per migliorare il servizio offerto. Il trattamento dei dati raccolti e' effettuato nel rispetto della normativa sulla pra'ivasi

Task completed by system: OK / NOT OK

Task requested by user: SAVE ALL

TURN - StartTime	Event	Task/Action	Grammar	
1 - 13:19:31		initial/Start	GrammarVuota_it-IT.grxml	
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank

Buongiorno sono Luisa, con chi desidera parlare?

Task completed by system: OK / NOT OK

AL PCM

Transcription

Annotation

Task requested by user: SAVE ALL

TURN - StartTime	Event	Task/Action	Grammar	
2 - 13:19:42		initial/AskPerson	GrammarNomi_it-IT	
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank
Person_NameSurname	Kolarik	Jan_Kolarik	0.71108	1
Concept Name	Concept Value		Source	Confidence
Person_NameSurname	Jan_Kolarik		voice	0.71108

Sto' cercando il telefono di Jan_Kolarik .

Task completed by system: OK / NOT OK

Task requested by user: SAVE ALL

TURN - StartTime	Event	Task/Action	Grammar	
3 - 13:19:51		AddressBook/DoVerifyPerson		
ASR Concept	ASR Utterance	ASR Interpretation	ASR Confidence	Rank
Concept Name	Concept Value		Source	Confidence

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Dialog evaluation

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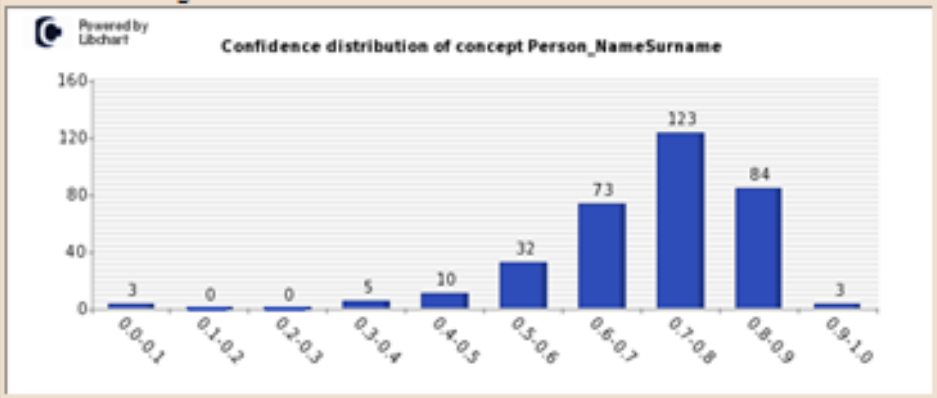
Concepts Statistics: for each concept we report its occurrences, percentages, confidence average and histograms on the confidence scores.

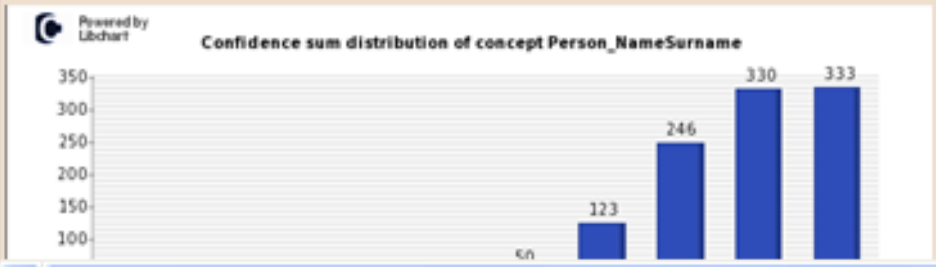
[Selection 0] Application name: **Rubrica**
Date From: **20080301** To: **20080312** Time From: **7:00:00** To: **19:00:00**
Duration From: **0** secTo: **1000** sec
[Selection 1] Application name: **Rubrica**
Date From: **20080222** To: **20080226** Time From: **7:00:00** To: **20:00:00**
Duration From: **0** secTo: **240** sec

Number ofanalyzed Dialogs: **106**
Total duration **6945** sec
Total duration **1 hours and 55 minutes**
Average duration **65.52** seconds

Concept analysis:
Concept Query://Dialog[Turn/Concept/ConceptName[contains(text(),'Person_NameSurname')]]
Annotator Query:

Concept: **Person_NameSurname**
Number ofDialogscointaining thisconcept: **96**
Concept Type: **NamedEntity**
Number of times that it appears: **333**
Corresponding percentage: **90.57%**
Confidence average: **0.713**





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Dialog evaluation

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Dialog Statistics: we made with an automatic analysis on the applications goals, on the strategy the user follows to achieve the goal and we recognize what appended when no goals are achieved

[Selection 0] Application name: **Rubrica**
Date From: **20080301** To: **20080312** Time From: **7:00:00** To: **19:00:00**
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[Selection 1] Application name: **Rubrica**
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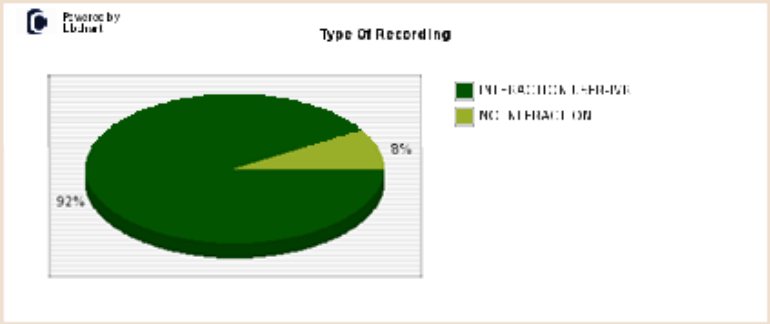

106 => TOTAL NUMBER OF RECORDINGS
97 [91.51 %] => NUMBER OF RECORDINGS CONTAINING AT LEAST ONE USER-IVR INTERACTION
9 [8.49 %] => NUMBER OF RECORDINGS WITH NO CONCEPTS AND NO CONNECTION TO OPERATOR
Total duration: **6945 sec**
Total duration: **1 hours and 55 minutes**
Average duration: **65.52 seconds**

Statistics of dialogs where GOAL(s) have been achieved:

GOAL: Talk to a person (Person_NameSurname Action_Value)
QUERY: //Dialog[Turn/Concept [ConceptName[contains(text(),'Action_Value')] and Interpretation[contains(text(),'chiamata')]] and Turn/Concept/ConceptName='Person_NameSurname']
Number of dialogs where Goal has been caught: 18 [18.56 %]
Total duration: **1194** seconds
Total duration: **0** hours and **19** minutes
Average duration: **66.33** seconds
The last action in these dialogs has been:
-**Hangup** appears **16** time. [SHOW] [HIDE] LOG file
-**DoConnection** appears **1** time. [SHOW] [HIDE] LOG file
-**End** appears **1** time. [SHOW] [HIDE] LOG file
[SHOW DETAILS] [HIDE DETAILS]

GOAL: Information on a person (Person_NameSurname Action_Value)
QUERY: //Dialog[Turn/Concept [ConceptName[contains(text(),'Action_Value')] and Interpretation[contains(text(),'lettura')]] and Turn/Concept/ConceptName='Person_NameSurname']
Number of dialogs where Goal has been caught: 62 [63.92 %]

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