

## GALE Phase 4 Arabic Broadcast Conversation Speech

### 1. Introduction

GALE Phase 4 Arabic Broadcast Conversation Speech contains approximately 75 hours of Arabic broadcast conversation speech collected in 2008 and 2009 by the Linguistic Data Consortium (LDC), MediaNet, Tunis, Tunisia and MTC, Rabat, Morocco during Phase 4 of the DARPA GALE program.

Broadcast audio for the DARPA GALE (Global Autonomous Language Exploitation) program was collected at LDC's Philadelphia, PA USA facilities and at three remote collection sites: Hong Kong University of Science and Technology (HKUST), Hong Kong (Chinese); Medianet (Arabic); and MTC (Arabic). The combined local and outsourced broadcast collection supported GALE at a rate of approximately 300 hours per week of programming from more than 50 broadcast sources for a total of over 30,000 hours of collected broadcast audio over the life of the program.

The broadcast conversation recordings in this release feature interviews, call-in programs and roundtable discussions focusing principally on current events from the following sources: Al Alam News Channel, based in Iran; Al Fayhaa, an Iraqi television channel; Al Hiwar, a regional broadcast station based in the United Kingdom; Alnurra, a U.S. government-funded regional broadcaster; Aljazeera, a regional broadcaster located in Doha, Qatar; Al Ordiniyah, a national broadcast station in Jordan; Dubai TV, a broadcast station in the United Arab Emirates; Lebanese Broadcasting Corporation, a Lebanese television station; Saudi TV, a national television station based in Saudi Arabia; Syria TV, the national television station in Syria; and Tunisian National TV, a national television station in Tunisia.

### 2. Broadcast Audio Data Collection Procedure

LDC's local broadcast collection system is highly automated, easily extensible and robust and capable of collecting, processing and evaluating hundreds of hours of content from several dozen sources per day. The broadcast material is served to the system by a set of free-to-air (FTA) satellite receivers, commercial direct satellite systems (DSS) such as DirecTV, direct broadcast satellite (DBS) receivers, and cable television (CATV) feeds. The mapping between receivers and recorders is dynamic and modular; all signal routing is performed under computer control, using a 256x64 A/V matrix switch. Programs are recorded in a high bandwidth A/V format and are then processed to extract audio, to generate keyframes and compressed audio/video, to produce time-synchronized closed captions (in the case of North American English) and to generate automatic speech recognition (ASR) output.

The collection schedule is stored in a relational database using a Mysql database server. The database contains a history of all of the recordings that have been made; it has configuration and status information for all recorders; it has information about all receivers and associates specific programs of interest with the appropriate receiver; it contains a schedule of all recording jobs to be executed and their status; and it stores all audit judgments associated with a given recording.

For the GALE program, Medianet collected Arabic broadcast news (BN) and broadcast conversation (BC) programming from across the Gulf region using its internal system and LDC's portable broadcast collection platform installed in 2008. Among the sources collected by Medianet were Abu Dhabi TIV, Al

Arabiya, Al Baghdadya, Al Fayhaa, Al Forat, Al Hiwar, Al Iraqiyah, Al Manar, Al Ordiniyah, Al Sharqiya, Bahrain TV, Dubai TV, Kuwait TV, Oman TV, Qatar TV, Palestine Satellite Channel, Saudi TV and Tunis TV.

MTC collected Arabic BN and BC programming from Al Baghdadya, Alhurra, Al Maghribia, Arabiaa, Radio Sawa and Yemen TV using its internal collection system.

LDC's portable broadcast collection platform is a TiVO-style digital video recording (DVR) system that records two streams of A/V material simultaneously. It supports analog CATV (NTSC and PAL) and FTA DVB-S satellite programming and can operate outside of the United States. It has a small footprint weighs less than 30 pounds and can be transported as carry-on luggage. The portable platform deployed at Medianet's Tunisian collection facility collected multiple streams of regional Arabic programming from various sources.

Further information about LDC's broadcast collection system can be found in LDC's Broadcast Collection System Data Sheet, [http://www ldc upenn edu/DataSheets/Broadcast\\_Collection\\_System\\_DS.pdf](http://www ldc upenn edu/DataSheets/Broadcast_Collection_System_DS.pdf).

### 3. Broadcast Collection Audit Procedure

All broadcast data collected for GALE by LDC and by the remote collection sites managed by LDC were manually audited by Arabic, Chinese, and English speakers for language, program and quality. The broadcast auditing process served three principal goals: as a check on the operation of LDC's broadcast collection system equipment by identifying failed, incomplete or faulty recordings; as an indicator of broadcast schedule changes by identifying instances when the incorrect program was recorded; and as a guide for data selection by retaining information about a program's genre, data type and topic. LDC developed a Broadcast Audit Interface Tool to audit its local collection which presented auditors with three segments from each recording (beginning, middle and end) from which audit judgments were made in English.

Each remote collection site used a form of audit procedure based on the LDC model. Medianet generated English-language .xls reports for the Arabic programming it collected. Those reports contained one set of auditors' judgments for an entire program, including audio quality; genre; data format; percentage of Modern Standard Arabic; dialect type and percentage; topic; and comments. MTC generated English-language .xml and .html audit reports for the Arabic programming it collected. Those reports contained auditors' judgments from three portions of each program (beginning, middle and end), including whether a recording occurred, the audio quality, language, whether the correct program was recorded, the data type and topic.

Further information about the audit procedure and LDC's Broadcast Audit Interface Tool can be found in Audit Procedure Specification, Version 2.0 included in this release.

### 4. Source Data Profile

This release contains 83 audio files. Following is a breakdown of files by source and distinct program:

Source	Program	Program ID	#Broadcasts	Total Hrs.
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Al Alam	Iraq Now	IRAQNOW	1	1.0
Al Alam	Under Spotlight	SPOTLITE	2	2.1
Al Alam	With the Event	WITHEVENT	1	1.0
Al Fayha	Freedom Space	FREEDOMSPACE	3	3.7
Al Hiwar	To All Arabs	ALLARABS	10	9.1
Al Hiwar	Case and Debate	CASEDEBATE	1	0.9
Al Hiwar	Culture and Literature	CULTURE	1	1.0
Al Hiwar	Free Opinion	FREEOPINION	4	3.7
Al Hiwar	The Khaliji Dimension	KHALIJIDIMENSION	1	1.0
Al Hiwar	Light on Events	LIGHTEVENTS	6	6.2
Al Hiwar	Education Reflections	REFLECTIONS	1	1.0
Al Hiwar	Valid for Every Time and Place	VALID	2	1.8
Al Hurra	Al Hurra Presents	ALHURRAPRESENTS	2	1.7
Al Hurra	All Directions	ALLDIRECTIONS	2	1.2
Al Hurra	Equality	EQUALITY	2	2.0
Al Hurra	Eye on Democracy	EYEONDEMOCRACY2	1	0.8
Al Hurra	Free Hour	FREEHOUR	2	2.0
Al Hurra	Gulk Talks	GULFTALKS	2	1.6
Al Hurra	Inside Washington	INSIDEWASHINGTON	2	0.9
Al Hurra	Packages	PACKAGES	2	2.0
Al Hurra	Special Report	SPECIALREPORT	2	2.0
Al Hurra	Thirty Minutes	THIRTYMINUTES	3	1.5
Al Hurra	Talk of Two Rivers	TWORIVERS	2	1.9
Al Jazeera	From Washington	FROMWASH	1	1.0
Al Jazeera	Open Dialogue	OPENDIAL	1	1.0

Al Jazeera	Opposite Directions	OPPDIREC	2	2.1
Al Jazeera	Without Boundaries 1	WITHOUTBOUNDS1	2	2.1
Al Ordiniyah	It Happened Today	HAPPENEDTODAY	3	2.4
Al Ordiniyah	Our Story	OURSTORY	1	0.9
Dubai TV	Gulf Women	GULFWOMEN	3	2.7
LBC	Naharkum Saïid	NAHAR	5	5.2
Saudi TV	Saudi Sermon	SAUDISERMON	3	2.8
Syria TV	Windows	WINDOWS	1	1.0
Tunis 7	Tunis Sermon	TUNISSERMON	4	1.7

## 5. Data Directory Structure

The directory structure in this data release is organized as follows.

- Broadcast audio collection top directories

/data

- Documentation directory

/docs

## 6. Data File Description

### 6.1 Audio File Format

The audio files in this release are flac compressed Waveform Audio File format (.flac), 16000 Hz single-channel 16-bit PCM files.

### 6.2 Audio File Names

The broadcast audio files in this collection follow LDC's defined naming convention for broadcast audio files.

{SRC}\_{PRG}\_{LNG}\_YYYYMMDD\_HHMMSS.flac

where -

- {SRC} is the source ID (e.g., CNN, VOA, etc.)

- {PRG} is the program ID (e.g., FREEHOUR, etc.)

- {LNG} is the three-letter language ID defined in ISO639-3. ARB is Standard Arabic; CMN is Mandarin Chinese; ENG is English.

- YYYYMMDD is the data collection (broadcast) date.

- HHMMSS is the start time of the program (HH is the hour in the 24-hour format)

## 7. Data Validation

Native Arabic speakers audited every recording in this release.

All audio files were checked to be valid .flac files.

The docs/CHECKSUM.md5 file contains MD5 checksums of all audio files in this corpus.

## 8. Copyright Information

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