

## GALE Phase 4 Chinese Broadcast Conversation Speech

### 1. Introduction

GALE Phase 4 Chinese Broadcast Conversation Speech contains approximately 172 hours of Mandarin Chinese broadcast conversation speech collected in 2008 by the Linguistic Data Consortium (LDC) and Hong University of Science and Technology (HKUST), Hong Kong, during Phase 4 of the DARPA GALE program.

Broadcast audio for the GALE program was collected at LDC's Philadelphia, PA USA facilities and at three remote collection sites: HKUST (Chinese); Medianet, Tunis, Tunisia (Arabic); and MTC, Rabat, Morocco (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: Beijing TV, a national television station in Mainland China; China Central TV (CCTV), a national and international broadcaster in Mainland China; Hubei TV, a regional television station in Mainland China, Hubei Province; Phoenix TV, a Hong Kong-based satellite television station ; and Voice of America (VOA), a U.S. government-funded broadcast programmer.

### 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 that need to be executed and their status; and it stores all audit judgments associated with a given recording.

HKUST collected Chinese broadcast programming using its internal recording system and a portable broadcast collection platform designed by LDC and installed at HKUST in 2006 (GALE Phase 1). Among the sources collected by HKUST for GALE are Anhui TV, Beijing TV, CCTV, Dongfang TV, Fujian TV, Hubei TV, Jiangsu TV and Voice of America (VOA) Mandarin.

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 HKUST's Chinese collection facility collected multiple streams of CCTV programming.

Further information about LDC's broadcast collection system can be found in Guidelines for Broadcast Audio Collection, Version 3.0, LDC Broadcast Documentation – Version 1.0, and 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.

Each remote collection site used a form of audit procedure based on the LDC model. HKUST generated English-language .xml and .html audit reports for the Chinese 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.

### 4. Source Data Profile

This release contains 236 audio files. Following is a breakdown of files by source and distinct program:

Source	Program	Program ID	#Broadcasts	Total Hrs.
Beijing TV	Two Way Lanes	TWOWAYLANES	3	1.8
CCTV1	Legal Report	LEGALREPORT	30	12.1
CCTV2	Across the Strait	ACROSSSTRAIT	1	0.5
CCTV2	Business Hour	BUSINESSHOUR	5	4.7
CCTV2	Dialog	DIALOG	7	6.0
CCTV2	Economy and the Law	ECONOMYANDLAW	31	13.5

CCTV4	Across the Strait	ACROSSSTRAIT	43	20.3
CCTV4	Today's Focus	TDYFOCUS	23	12.3
CCTVNEWS	News Probe	NEWSPROBE	1	0.8
CCTVNEWS	People in the News	PEOPLEINNEWS	14	9.1
CCTVNEWS	People's Congress 1	PEOPLES CONGRESS1	1	3.1
CCTVNEWS	People's Congress 2	PEOPLES CONGRESS2	17	46.1
CCTVNEWS	Tell It Like It Is	TELLITLIKEITIS	1	0.8
CCTVNEWS	Xiao Cui Interview	XIAOCUIINTERVIEW	9	6.4
Hubei TV	Communicate	COMMUNICATE	2	0.6
Phoenix TV	Asian Journal	ASIANJRNL	6	5.2
Phoenix TV	Behind the Headlines	BEHINDHL	5	2.7
Phoenix TV	A Date with Lu Yu	DATELUYU	1	1.0
Phoenix TV	News Line	NEWSLINE	5	2.7
Phoenix TV	Social Watch	SOCWATCH	6	3.2
VOA	Focus Dialogue	FOCUSDIALOGUE	6	3.1
VOA	Issues and Opinions	ISSUESANDOPINIONS	9	9.2
VOA	Listener's Hotline	LISTENERSHOTLINE	9	4.7
VOA	Straits Talk	STRAITSTALK	2	2.0

## 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.wav

where -

- {SRC} is the source ID (e.g. CCTV1)

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

- {LNG} is the three-letter language ID defined in ISO639-3. CMN is Mandarin Chinese.

- 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 Chinese 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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