

## GALE Phase 2 Chinese Broadcast News Speech

### 1. Introduction

GALE Phase 2 Chinese Broadcast News Speech contains approximately 126 hours of Mandarin Chinese broadcast news speech collected in 2006 and 2007 by the Linguistic Data Consortium (LDC) and Hong Kong University of Science and Technology (HKUST), Hong Kong, during Phase 2 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 news broadcasts focusing principally on current events from the following sources: Anhui TV, a regional television station in Mainland China, Anhui Province; China Central TV (CCTV), a national and international broadcaster in Mainland China; and Phoenix TV, a Hong Kong-based satellite television station.

### 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, [http://projects ldc.upenn.edu/gale/task\\_specifications/Collection\\_Task\\_Specificationv3.0.pdf](http://projects ldc.upenn.edu/gale/task_specifications/Collection_Task_Specificationv3.0.pdf), LDC Broadcast Documentation – Version 1.0, [http://projects ldc.upenn.edu/gale/task\\_specifications/LDC\\_Broadcast\\_System\\_Documentation\\_v1.0.pdf](http://projects ldc.upenn.edu/gale/task_specifications/LDC_Broadcast_System_Documentation_v1.0.pdf) and LDC’s Broadcast Collection System Data Sheet, <https://www ldc.upenn.edu/sites/www ldc.upenn.edu/files/broadcast-collections.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. The 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, [http://projects ldc.upenn.edu/gale/task\\_specifications/Audit\\_Procedure\\_Specificationv2.0.pdf](http://projects ldc.upenn.edu/gale/task_specifications/Audit_Procedure_Specificationv2.0.pdf).

### 4. Source Data Profile

This release contains 248 audio files. Following is a breakdown of files by source and distinct program:

Source	Program	Program ID	#Broadcasts	Total Hrs.
Anhui TV	News in Review	NEWSREVIEW	4	1.8
CCTV4	Daily News	DAILYNEWS	45	24.2
CCTV4	News3	NEWS3	43	23.2
CCTV7	Military News1	MILITARYNEWS1	25	9.8
CCTVNEWS	Evening News	EVENINGNEWS	22	11.2

Phoenix TV	Good Morning China	GOODMORNCN	41	22.1
Phoenix TV	From Phoenix to the World	PHNXWRLD	54	26.1

## 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 singlechannel 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., CNN, VOA, etc.)

- {PRG} is the program ID (e.g., LARRYKING, 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 Chinese speakers audited every recording in this release.

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

The docs/file.tbl file contains MD5 checksums of all files in this corpus.

## 8. Copyright Information

Portions © 2006-2007 Anhui TV, China Central TV, Phoenix TV, © 2006-2007, 2011 Trustees of the University of Pennsylvania

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