Broadcast Language Identification System (BLIS)

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I. Introduction

- TV transmission systems use highly automated file-based broadcast systems for audio and video

- Content-management systems automatically deliver programmes and all ancillary services in their correct format and on time

- Sub-systems require validation that correct language is delivered to a particular service and/or region.

- Many dialects exist for each spoken language and accent variation cause spoken word identification problems

- Each dialect requires a specific language set
  (male / female / child / adult)

- Country variations e.g. USA / UK / Australia English language

- TV programmes contain music, multiple speakers, background noise – laughter, shouting

- Language validation managed by operators who confirm accompanying language is correct for a video broadcast

- Incorrect language transmission caused by system faults and errors at numerous points during the broadcast

- Audio track layout may be accidently mismatched to the definition standard of the accompanying programme [1]

- Metadata information can contain incorrect reference to audio language channels [2, 3]

II. BLIS design

- Two applications: lightweight dash-board application (Fig. 1a) and back-office processing application (Fig. 1b)

- Single operator can monitor multiple broadcast services

- System examines pre-broadcast audio to identify spoken language and compare with expected language of the video broadcast
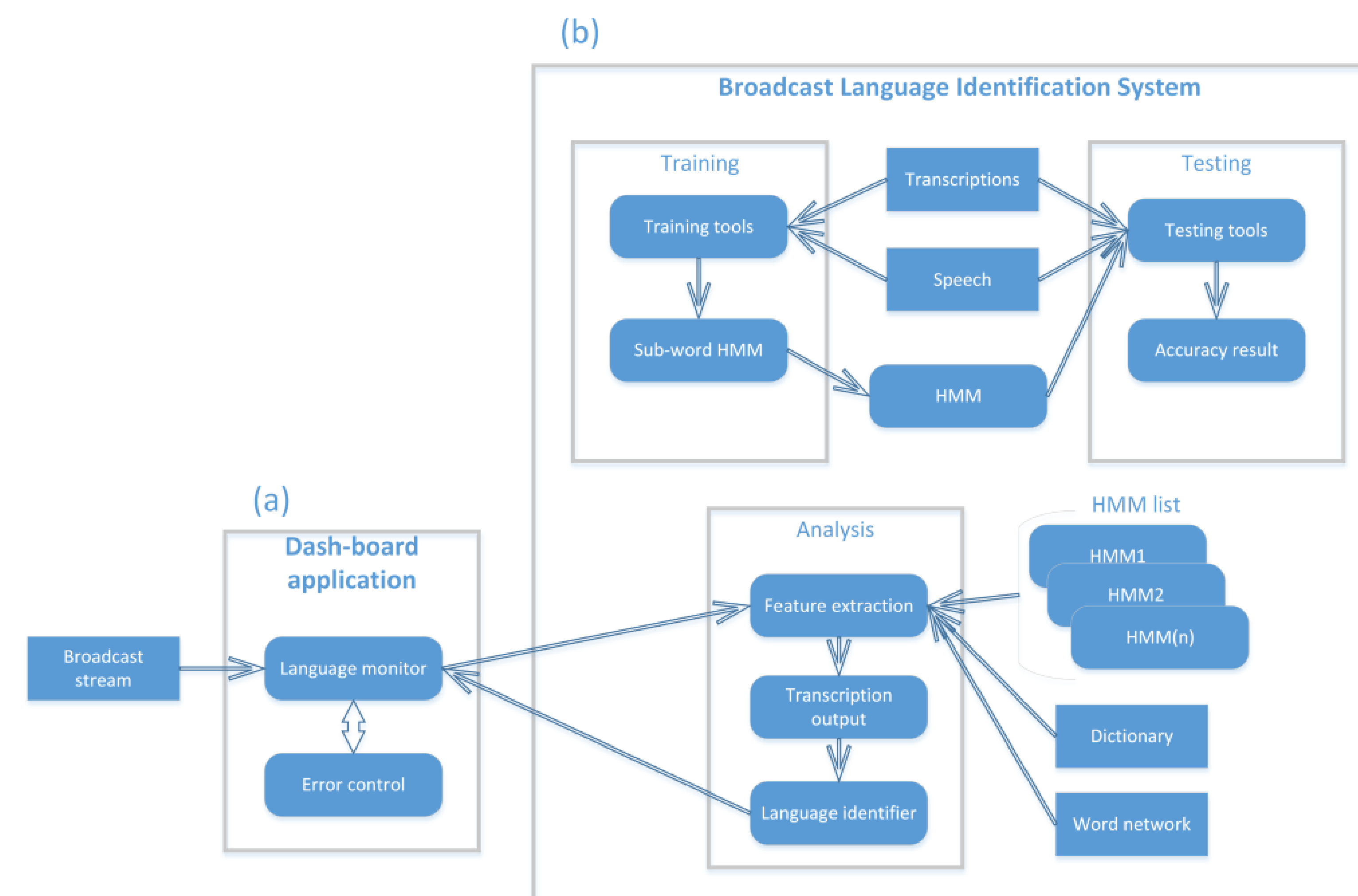

Figure 1: Overview of BLIS modules

III. BLIS Implementation

- Dashboard application delivers error feedback to the operator

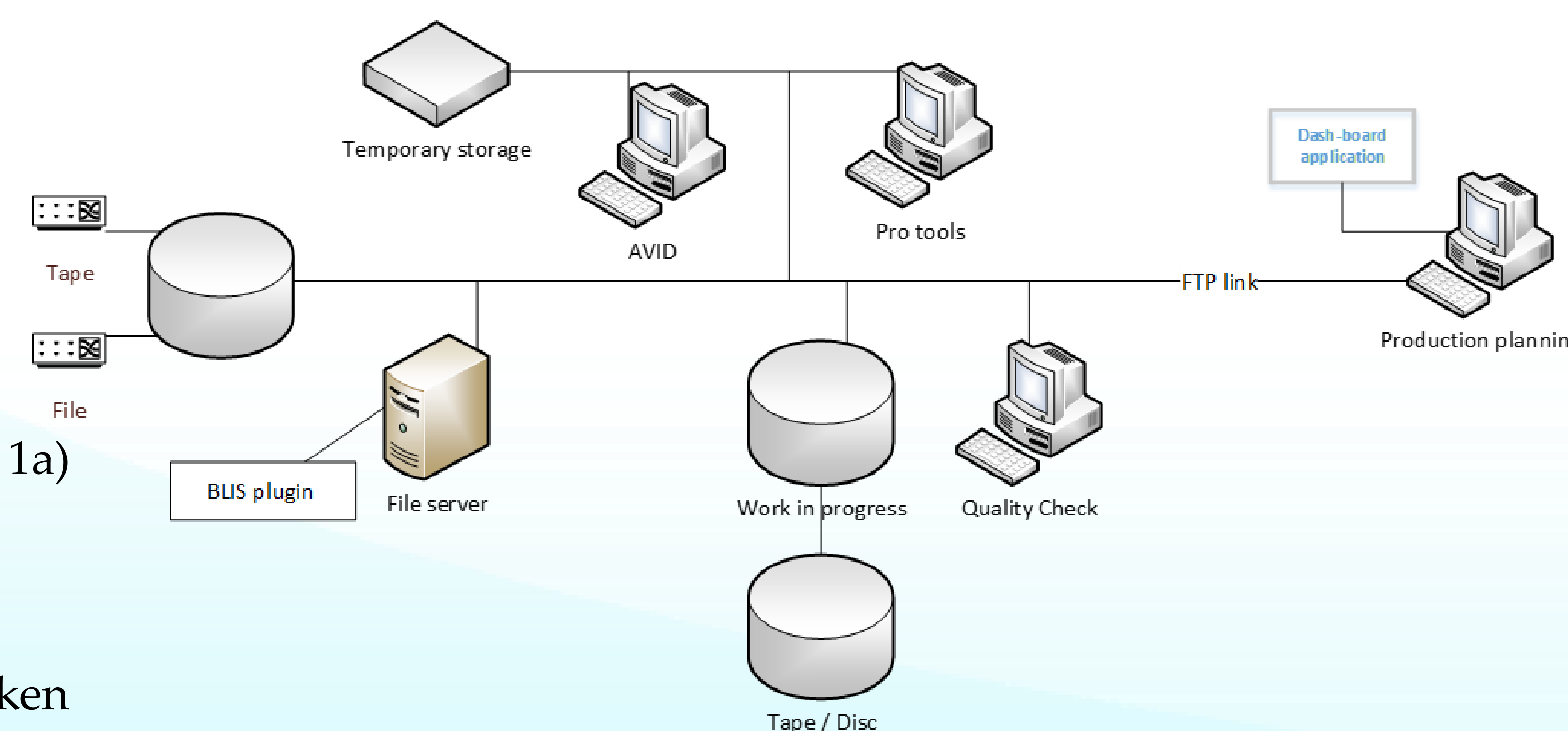- Software functionality may integrate with existing broadcast software systems – Fig. 2

Figure 2: Architecture of Broadcast System

- BLIS requires multiple language models to accurately predict sub-word phonemes (see Fig. 3)
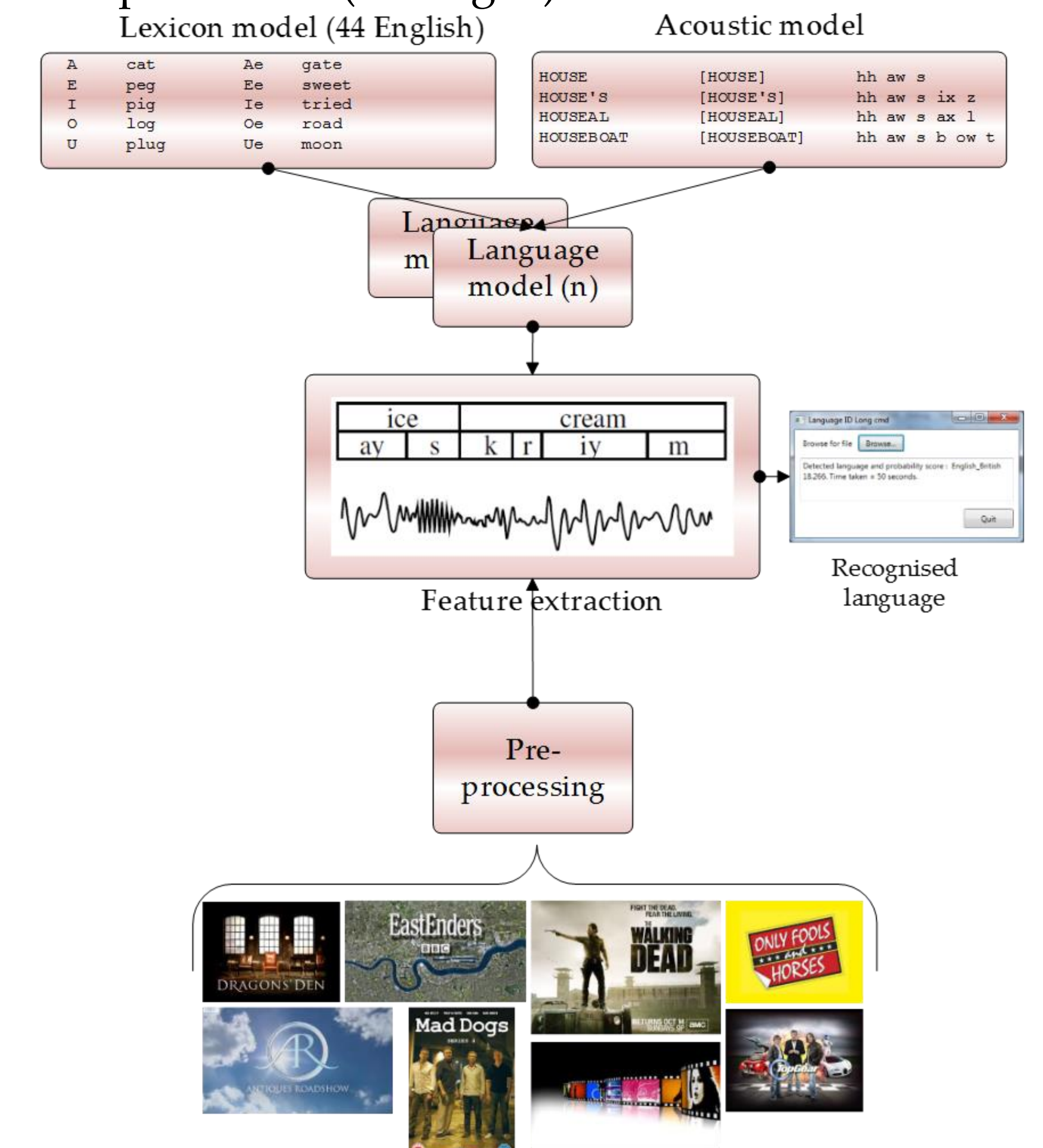

Figure 3: Processes in language identification

IV. Conclusion

- In highly automated file-based broadcast systems, human error can unintentionally introduce audio and video mismatches

- Manual techniques are currently used for problem identification

- BLIS is an automatic language identification system that replaces manual intervention with dash-boarding software

- Multiple channels automatically monitored and broadcast operator is immediately notified of potential problems

V. Acknowledgements

VI. References

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