

Machine Translation for Broadcast Journalism



Susanne Weber

Language Technology Producer, BBC News Labs

In this presentation...



Automated MT for
Media Processing



CAT for
Video Translation

SUMMA – H2020 EU-funded collaboration



Scalable Understanding of Multilingual Media

summa-project.eu





SUMMA – Objectives

- Scalable and extensible monitoring platform
- Higher quality and richer tools for monitors
- Extensible automated knowledge base construction
- **Multilingual and cross-lingual capabilities**

SUMMA – Consortium





SUMMA – 3 Use Cases

1 - External Media Monitoring (BBC)

2 - Internal Media Monitoring (DW)

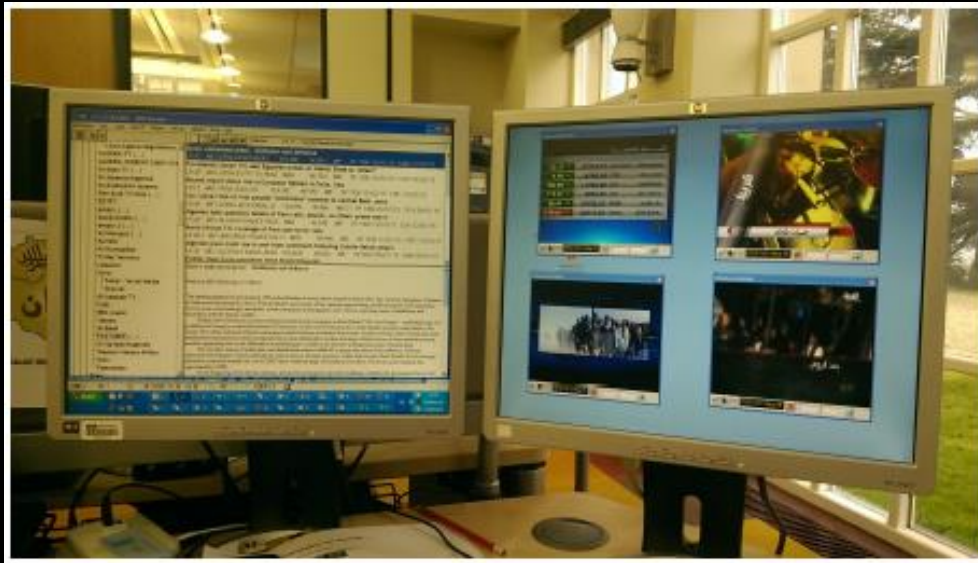
3 - Data Journalism

SUMMA – Use Case 1 External Monitoring



External Monitoring

SUMMA – BBC Monitoring



BBC
MONITORING

عربي

Español

English

Deutsch

فارسی

português

latviešu

Український

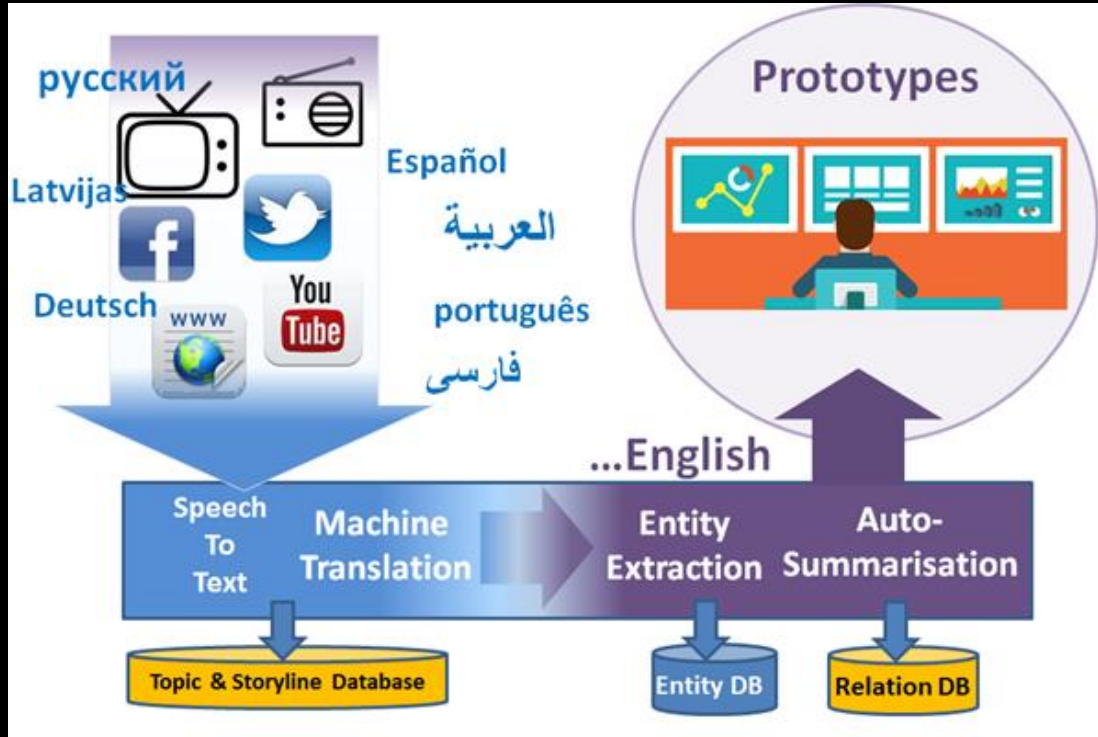
Русский

SUMMA – Use Case 2 Internal Monitoring

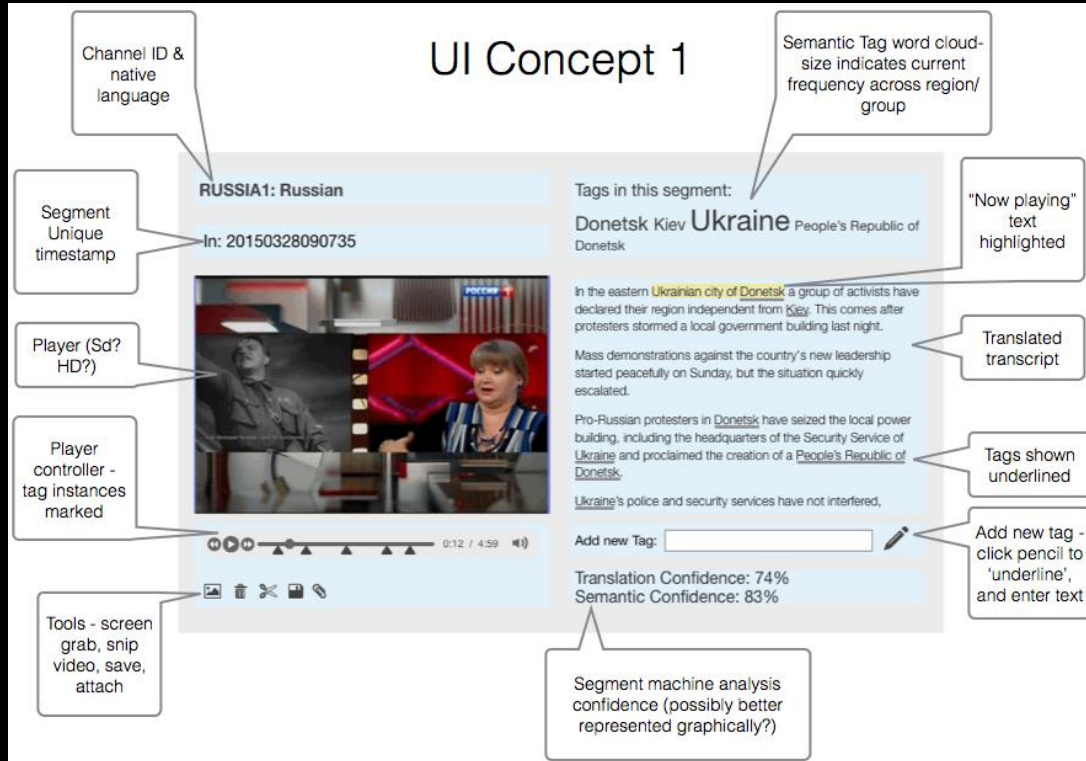


Internal Monitoring

SUMMA – The Pipeline



SUMMA – UI Concept





SUMMA – MT – The Languages

**High
resourced**

**Arabic
German
Spanish
English**

**Medium
resourced**

**Portuguese
Russian
Farsi**

**Low
resourced**

**Latvian
Ukrainian**



SUMMA – Machine Translation




Sources:

- from ASR
- from online text
- from social media



SUMMA – Hack Events

BBC *#newsHACK*

- 2017  Automated monitoring of multi-media sources
- 2018  Focus on Data Journalism
- 2019  Focus on multilingual aspect

ALTO - Video Translation Tool (BBC)





ALTO – video translation for News

- Audience expectations
- Multilingual journalism
- Language technologies



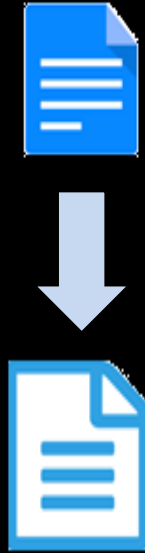


How do we currently translate videos?

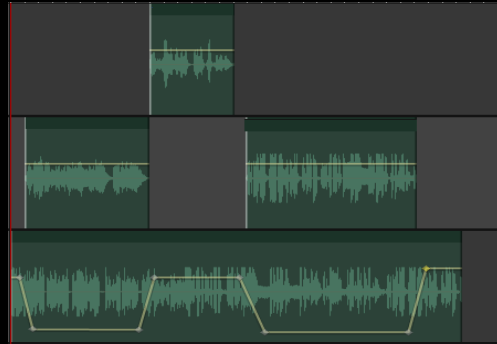
Typical Workflow for Video Translation



**Translate
Script**



**Record
Voice-over tracks**



**Edit
Audio**

**Balance
Audio Tracks**

**Align
Audio & Video**



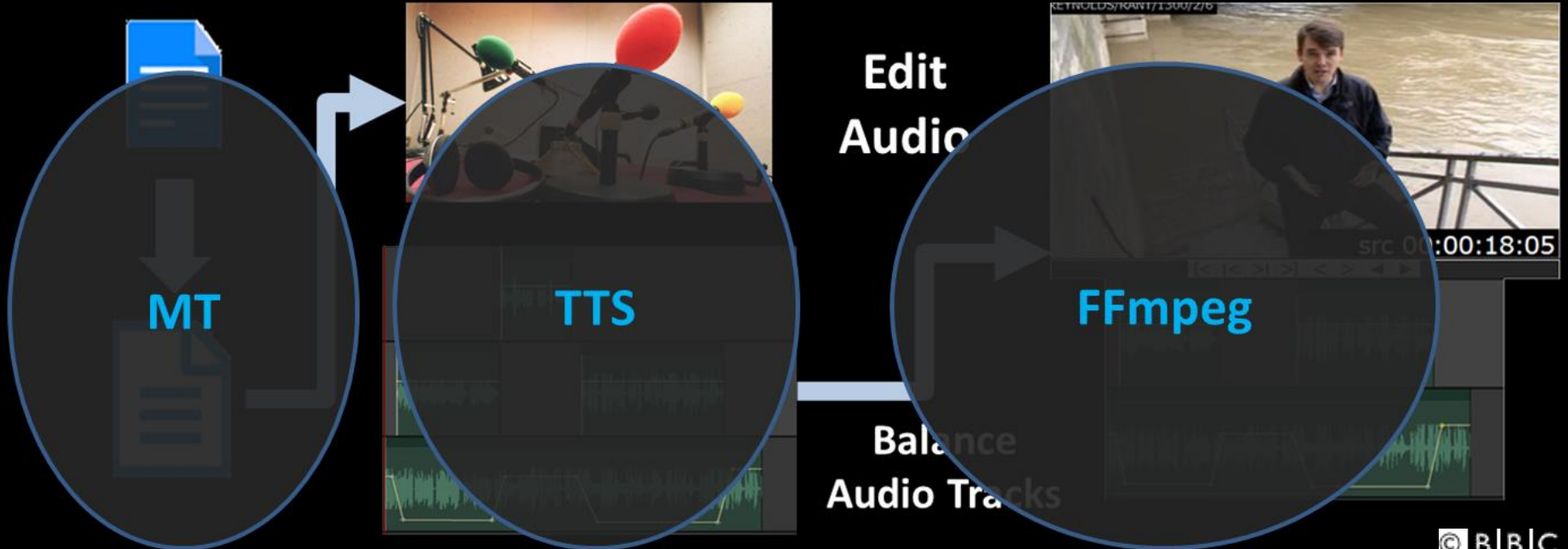
Typical Workflow for Video Translation



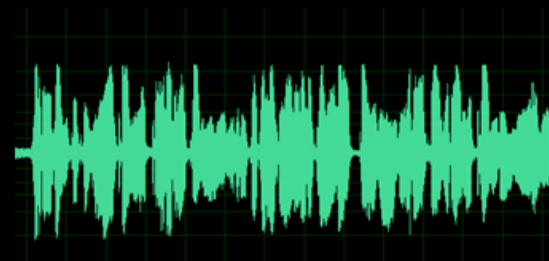
Translate
Script

Record
Voice-over tracks

Align
Audio & Video



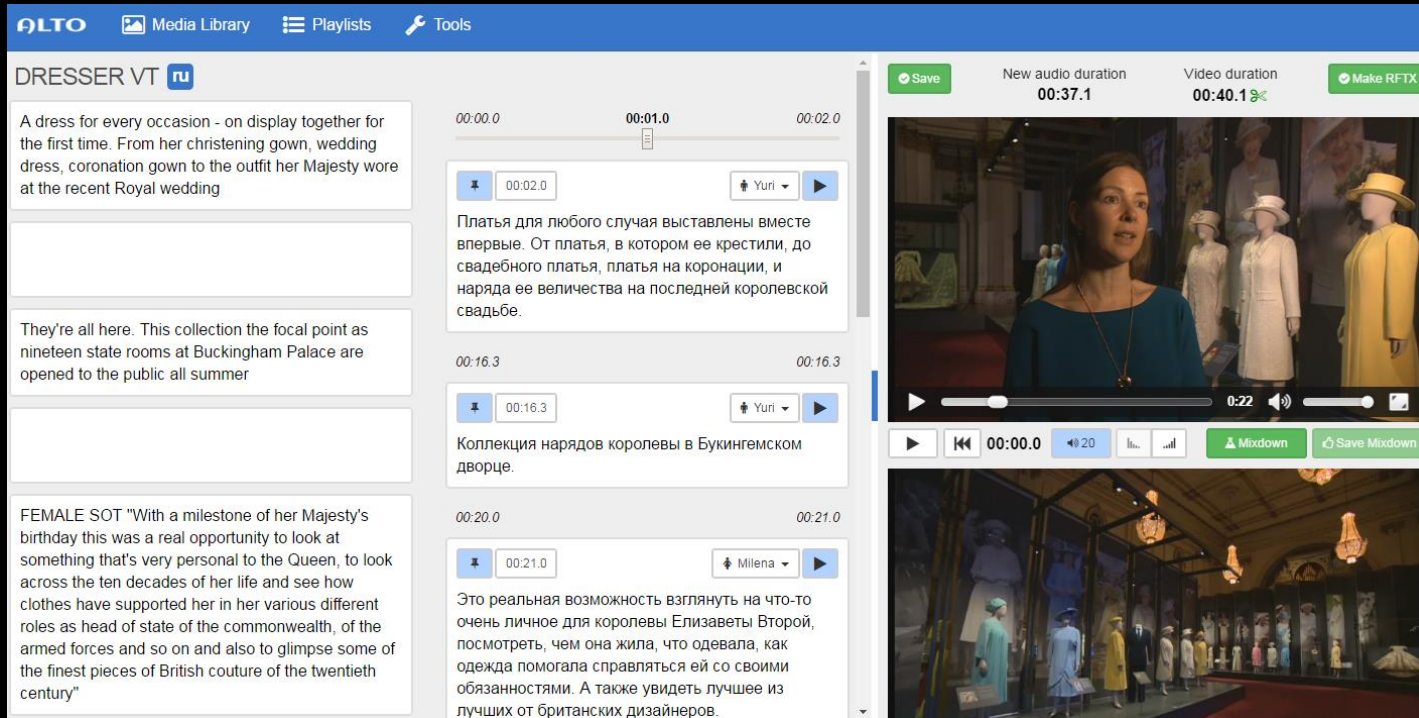
Off-the-shelf products



**Text-To-Speech
Voice Synthesis**

- Google Translate
- Computer-Assisted Translation

ALTO – Translation Window



The screenshot displays the ALTO software interface. The top navigation bar includes 'ALTO', 'Media Library', 'Playlists', and 'Tools'. The main content area is titled 'DRESSER VT' and contains three video segments with Russian subtitles. The first segment (00:00.0 to 00:02.0) discusses a dress for every occasion. The second segment (00:16.3 to 00:16.3) mentions nineteen state rooms at Buckingham Palace. The third segment (00:20.0 to 00:21.0) describes a milestone for the Queen's birthday. A video player on the right shows a woman in a blue dress in a museum setting, with a 'Save' button and duration information (00:37.1 for audio, 00:40.1 for video). The player controls include play, stop, and volume buttons, along with 'Mixdown' and 'Save Mixdown' options.

ALTO Media Library Playlists Tools

DRESSER VT ru

A dress for every occasion - on display together for the first time. From her christening gown, wedding dress, coronation gown to the outfit her Majesty wore at the recent Royal wedding

00:00.0 00:01.0 00:02.0

00:02.0 Yuni ▶

Платья для любого случая выставлены вместе впервые. От платья, в котором ее крестили, до свадебного платья, платья на коронации, и наряда ее величества на последней королевской свадьбе.

00:16.3 00:16.3

00:16.3 Yuni ▶

Коллекция нарядов королевы в Букингемском дворце.

00:20.0 00:21.0

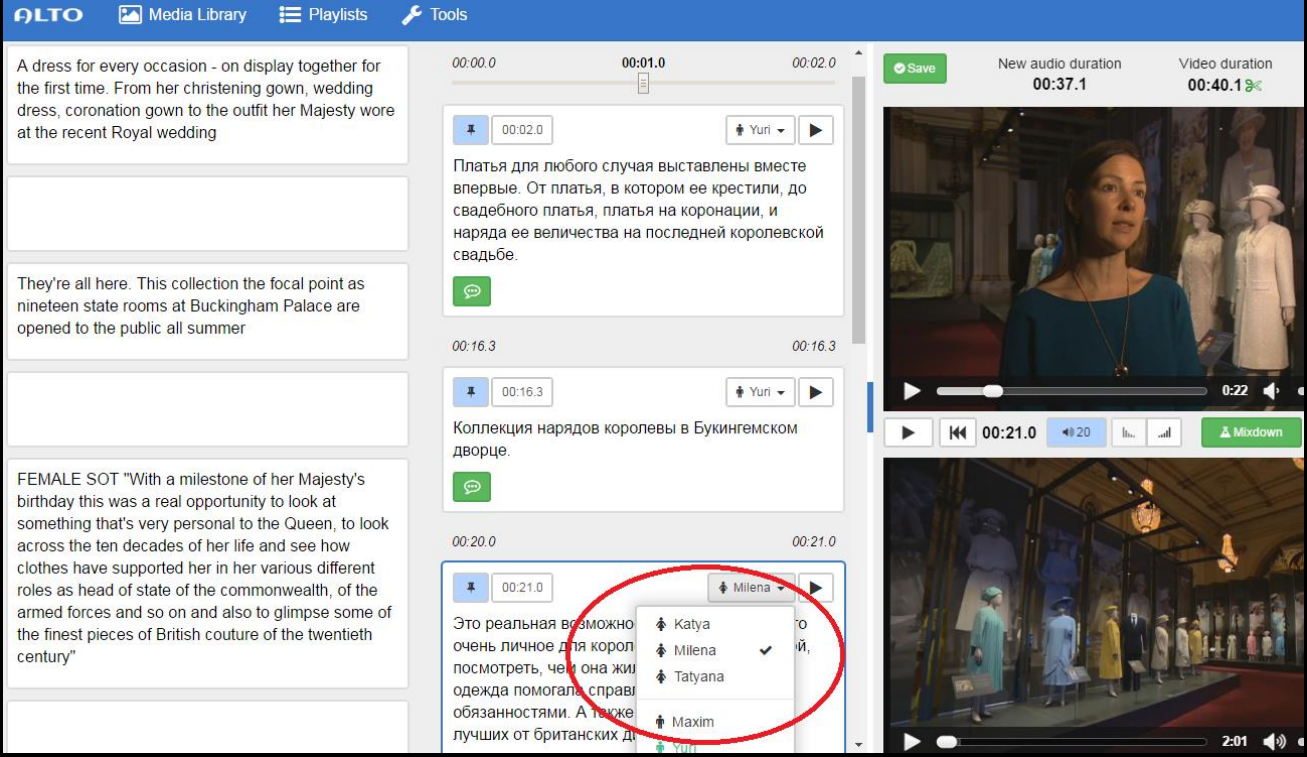
00:21.0 Milena ▶

Это реальная возможность взглянуть на что-то очень личное для королевы Елизаветы Второй, посмотреть, чем она жила, что одевала, как одежда помогала справляться ей со своими обязанностями. А также увидеть лучшее из лучших от британских дизайнеров.

Save New audio duration 00:37.1 Video duration 00:40.1 Make RFTX

▶ ◀ 00:00.0 ◀20 🔊 🔊 Mixdown Save Mixdown

ALTO - Audio Editing is Text Editing



The screenshot displays the ALTO software interface, which integrates text editing with audio editing. The interface is divided into several sections:

- Media Library:** On the left, there are three text blocks. The first block describes a dress collection: "A dress for every occasion - on display together for the first time. From her christening gown, wedding dress, coronation gown to the outfit her Majesty wore at the recent Royal wedding". The second block states: "They're all here. This collection the focal point as nineteen state rooms at Buckingham Palace are opened to the public all summer". The third block is titled "FEMALE SOT" and reads: "With a milestone of her Majesty's birthday this was a real opportunity to look at something that's very personal to the Queen, to look across the ten decades of her life and see how clothes have supported her in her various different roles as head of state of the commonwealth, of the armed forces and so on and also to glimpse some of the finest pieces of British couture of the twentieth century".
- Timeline:** The central part of the interface shows a timeline with three audio tracks. Each track has a text block associated with it. The first track (00:00.0 to 00:02.0) has Russian text: "Платья для любого случая выставлены вместе впервые. От платья, в котором ее крестили, до свадебного платья, платья на коронации, и наряда ее величества на последней королевской свадьбе." The second track (00:16.3 to 00:16.3) has Russian text: "Коллекция нарядов королевы в Букингемском дворце." The third track (00:20.0 to 00:21.0) has Russian text: "Это реальная возможность очень личное для королевы посмотреть, чем она живет, и как ее одежда помогала справляться с ее многочисленными обязанностями. А также увидеть некоторые из лучших от британских дизайнеров." A red circle highlights the name "Milena" in the track's header, with a dropdown menu showing other names: "Katya", "Milena" (checked), "Tatyana", and "Maxim".
- Video Player:** On the right, there is a video player showing a woman in a blue dress. The player displays "New audio duration 00:37.1" and "Video duration 00:40.1". The video is currently at 00:21.0. A "Mixdown" button is visible at the bottom right of the player.

BBC World Service – Languages and Styles



Translations from English into other languages:
Africa, Middle East, Asia, Latin America

Language styles

- **Journalists**: correct, complex, metaphors, idioms
- **Interviewees**: less correct, sometimes incomplete, disfluencies, colloquial
- **Headlines**: short, factual

BBC World Service – Language Styles



Examples: Simple, factual, headlines style:

- “Hurricane Newton has reached Mexico's west coast near a popular tourist destination.”
- “We'll bring you the latest with BBC Weather.”
- “No trip to Myanmar is complete without a visit to Bagan.”
- “Two weeks ago the temples were shaken by a strong earthquake.”

BBC World Service – Language Styles



Examples: Complex – authored by journalists:

- “Beating the most unpopular Republican Presidential nominee in the history of modern day polling should have been something of an open goal.”
- “...But it's with white males that her poll numbers are tanking - local businessman James O. would rather dive into a shark pool than give Hillary Clinton his vote.”
- “In a city where some live in peace and prosperity, others are in poverty and peril.”

BBC World Service – Language Styles



Examples: interviewees and vox pops:

“you can't just be cruising through no neighbourhood that's in a war with each other - because nine times out of ten - they probably don't recognise the car you in at the time and they can mistake you as a shooter from one of their rival gangs and they can open fire on you... you can't make no mistakes.” (Chicago citizen)

"The life here in the camp – it's not bad - like we have more friends we are like family - brothers - but I hope they do not take this camp from here. I am just staying here - I am just waiting.” (Calais migrant)



ALTO – User Feedback on CAT

Positive:

- Faster than translating from scratch
- Headlines / summaries are more correct than news packages
- Useful tool for proof-reading, use as dictionary

Negative:

- Syntax
- Declensions (Russian in particular)
- Idioms, metaphors, phrasal verbs



ALTO – Users' suggestions

- Phrase dictionary
- Translation memory
- Ability to translate honorifics

Conclusion and Next Steps:



- low resourced languages
- Machine Learning - small number of users
- MT - different language styles
- Collaborate with research groups and universities





“Your Japanese language is really well done -
thank you. I was impressed that you get an
expert to work with the automatic translation...”
(viewer from UK)

“As I can't speak English, I've been waiting for
a site like this.”
(viewer from Tokyo)