Mobile-Assisted Language Learning
in a Remote Australian Indigenous Community

Steven Bird, Charles Darwin University
Darwin, Australia (Larrakia Country)

Oral Language Technology

Designing innovative methods for learning, processing, and revitalising oral languages

PhD Scholarships

- oral language learning
- participatory design
- machine learning
- mobile web technologies
- with remote communities

Applications due 31 October

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cdu.edu.au/northern-institute/oral-language-technology

PART 1: Context

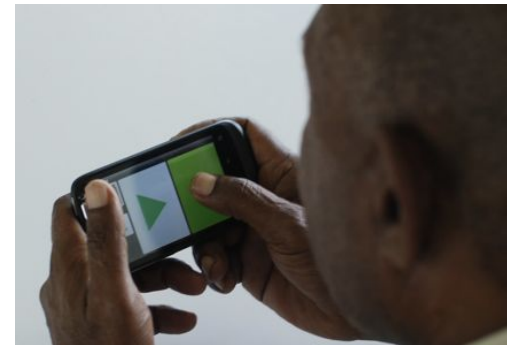– tools for working with endangered languages
– northern Australia

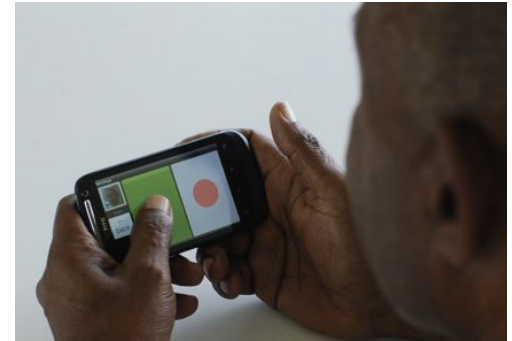# 2010: 100 voice recorders
Papua New Guinea

2013-14 Aikuma App
Papua New Guinea, Nepal, Uzbekistan, Brazil

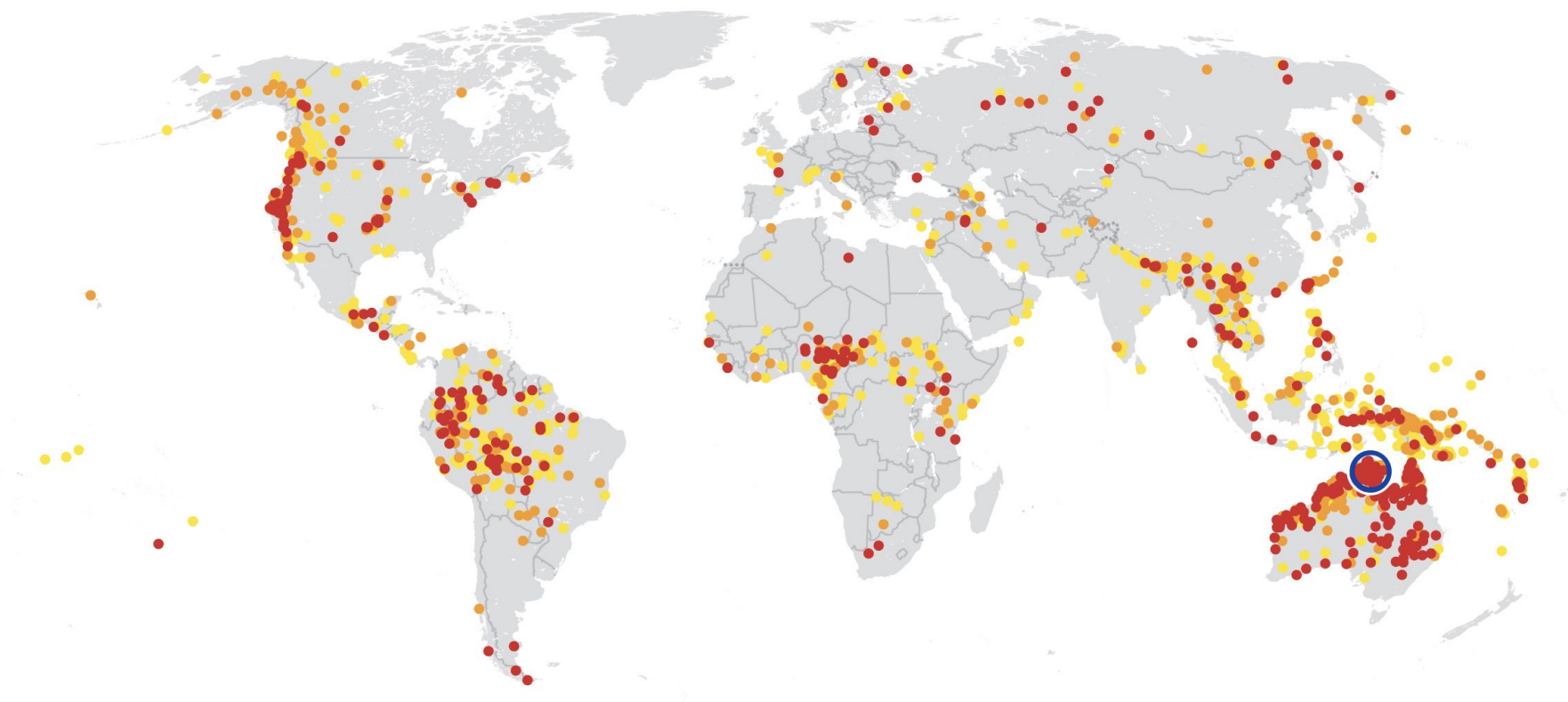# 2016: Two app design workshops
Charles Darwin University, Darwin

Bird, Steven (2018) Designing Mobile Applications for Documenting Endangered Languages, *Oxford Handbook of Endangered Languages* https://goo.gl/lujIIN
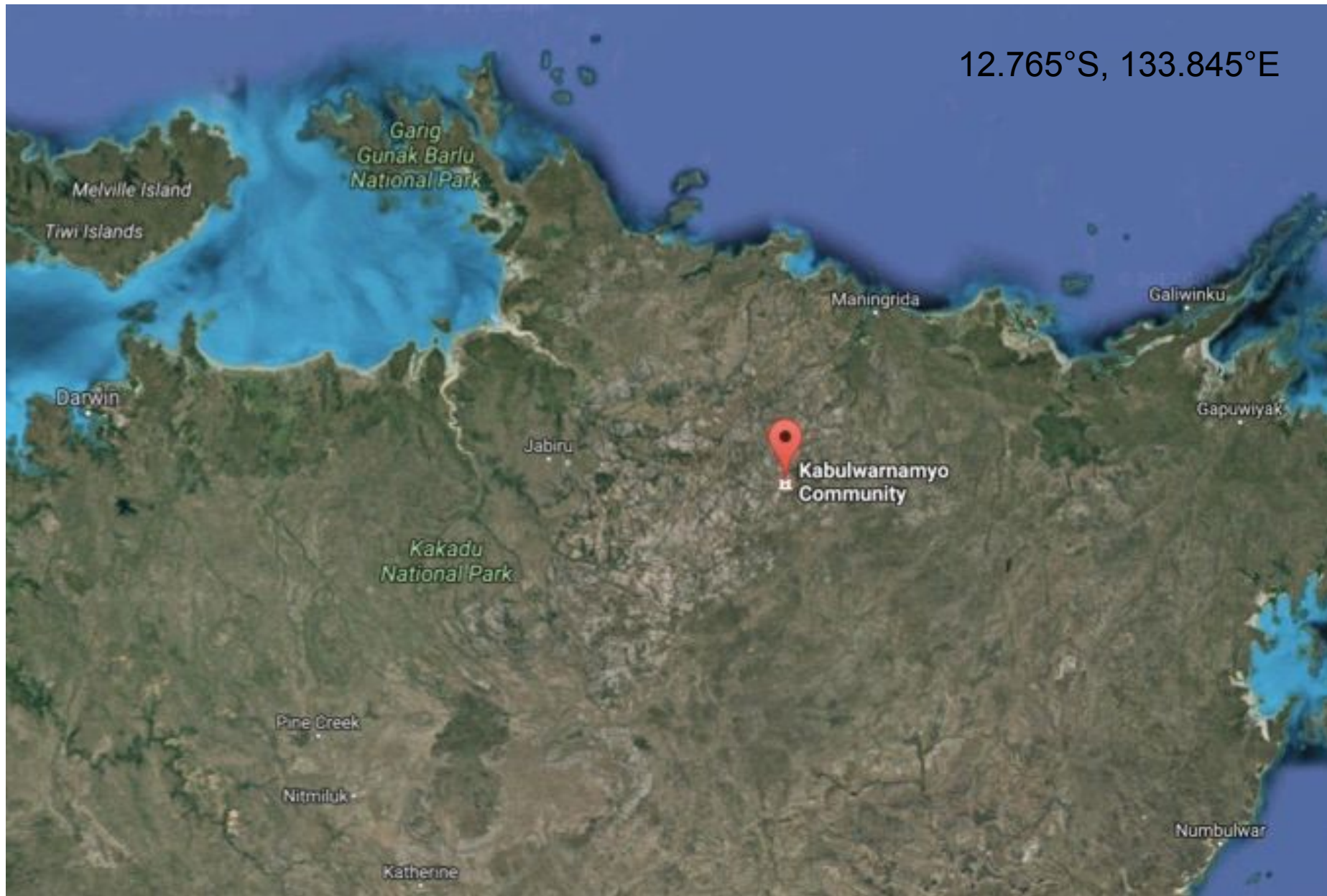
2017-present: Moving "on country"

Bird, Steven (in prep) Mobile-Assisted Language Learning in a Remote
Australian Indigenous Community, *manuscript available on request*

A hot spot for endangered languages

Losing languages, Gene Thorp and Kevin Schaul, Washington Post, 29 Nov 2014

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12.765°S, 133.845°E

Kabulwarnamyo Community, Warddeken Indigenous Protected Area, West Arnhem

12.765°S, 133.845°E

Kabulwarnamyo Community, Warddeken Indigenous Protected Area, West Arnhem

Kabulwarnamyo Community, Warddeken Indigenous Protected Area, West Arnhem

Discussing rock art conservation, Warddeken Rangers

Sewing room, Gunbalanya

Teaching grammar of Kunwinjku and English, Steven Bird and
Serina Namarnyilk, Nawarddeken Academy

Construction in the workshop at Manmoyi

Vehicle repair, Kabulwarnamyo

Securing a load, tying knots

Working together on country

caring for country

carbon abatement

rock art conservation

feral pest control

ecological survey

arts centres

housing construction

clinics

schools

local government

In English?

Australia's monolingual mindset

"Programs and policies are concocted in Darwin or Canberra where delivery in Aboriginal languages would be lucky to feature on the afterthought list. In the process, billions continue to be spent on social policy experiments with minimal return on investment."

7 JUL 2017 - 10:20AM

If you want to keep failing, keep talking to remote communities in English

IMAGE | VIDEO | AUDIO

Comment: 'Itne arratye angketyakenhe': 'They don't talk right'. How does language continue to influence those who already have such rich, spiritual and cultural beliefs?

PART 2:
How can we learn language on the job?

– from documentation to revitalisation
  (what are people motivated to do?)
– mobile-assisted oral language learning (2-way)

Four design workshops on country
Kabulwarnamyo, Warddeken IPA, West Arnhem

Supported by Federal Government project:
Mobile Software for Oral Language Learning in Arnhem Land

Not about attaining fluency
but learning useful words and phrases
in English and the local language/s
for rapport, recognition, and respect

Key insight:

1. capture language
   in action, in the moment, in context

2. review later

Example: Learning a procedure (e.g. damper)

nga-yakarrbun: I'm tipping it out

Example: Learning about country (e.g. tours)

mandjarduk: bush apple

App idea:
1. take a photo
2. talk about it (touch on it while talking*)
3. share locally (flashcard learning)

*Bettinson, Mat and Steven Bird (2018) Image-Gesture-Voice: A Web Component for Eliciting Speech, *Workshop on Collaboration and Computing for Under-Resourced Languages*, LREC 2018
http://lrec-conf.org/workshops/lrec2018/W26/

Context

- no/limited network

- what apps to design?

- what's going to work?

- scalability

- data soveignty

- shared devices

- working together

Consequence

- local battery-powered wifi

- local co-design workshops

- technology probe

- <$200 "BushPi"

- local mass storage

- server-hosted storage

- tablets

Taking a photo and talking about it, Kabulwarnamyo, West Arnhem

Guided tour of Kabulwarnamyo: Amber Whittaker and Stuart Guymala

Guided tour of Kabulwarnamyo: Julie Fraser and Dean Yibarbuk

BushPi
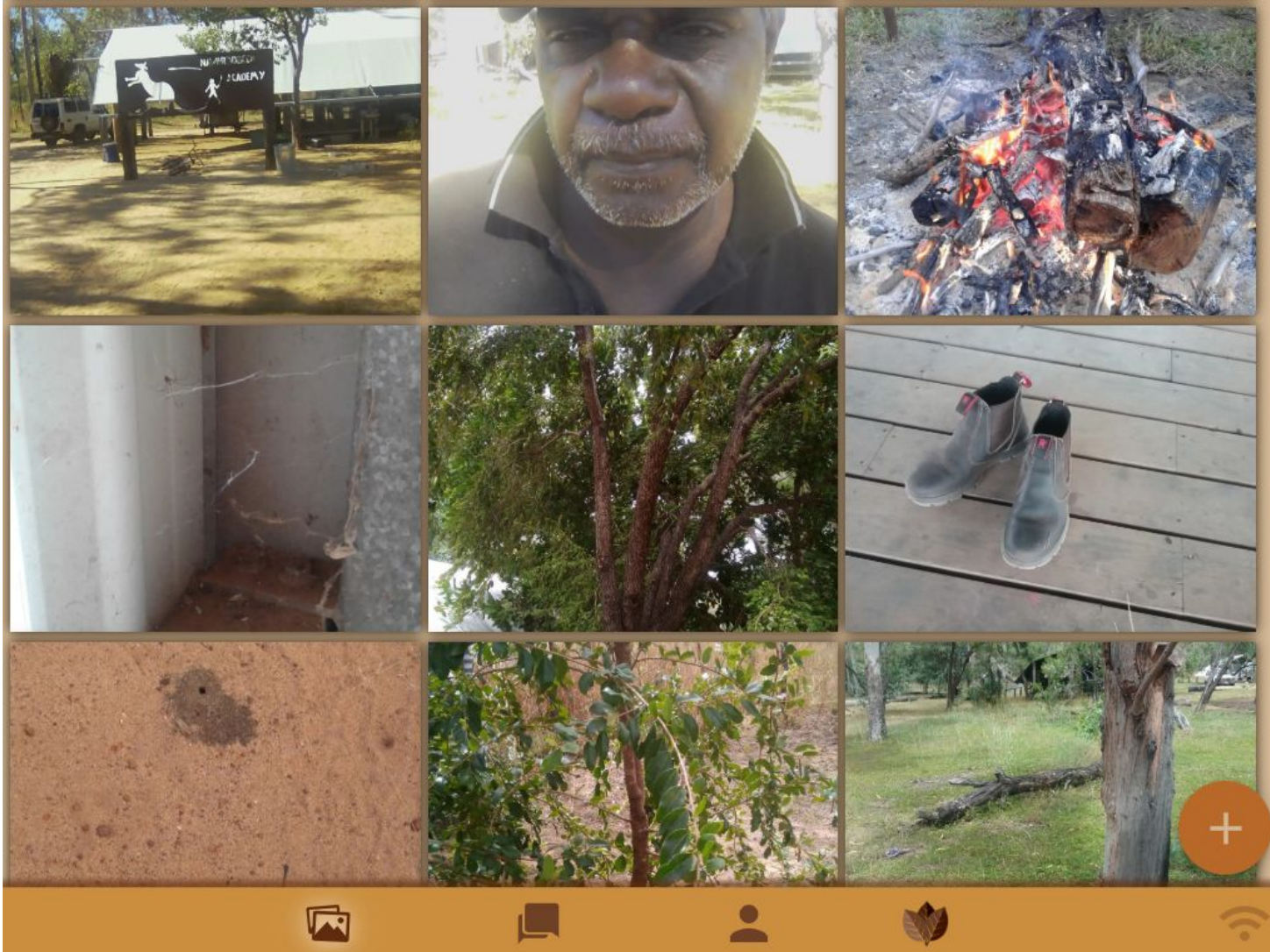
Custom web apps
+ battery-powered
wifi hotspot

Raspberry Pi:

- up to 0.5 TB storage
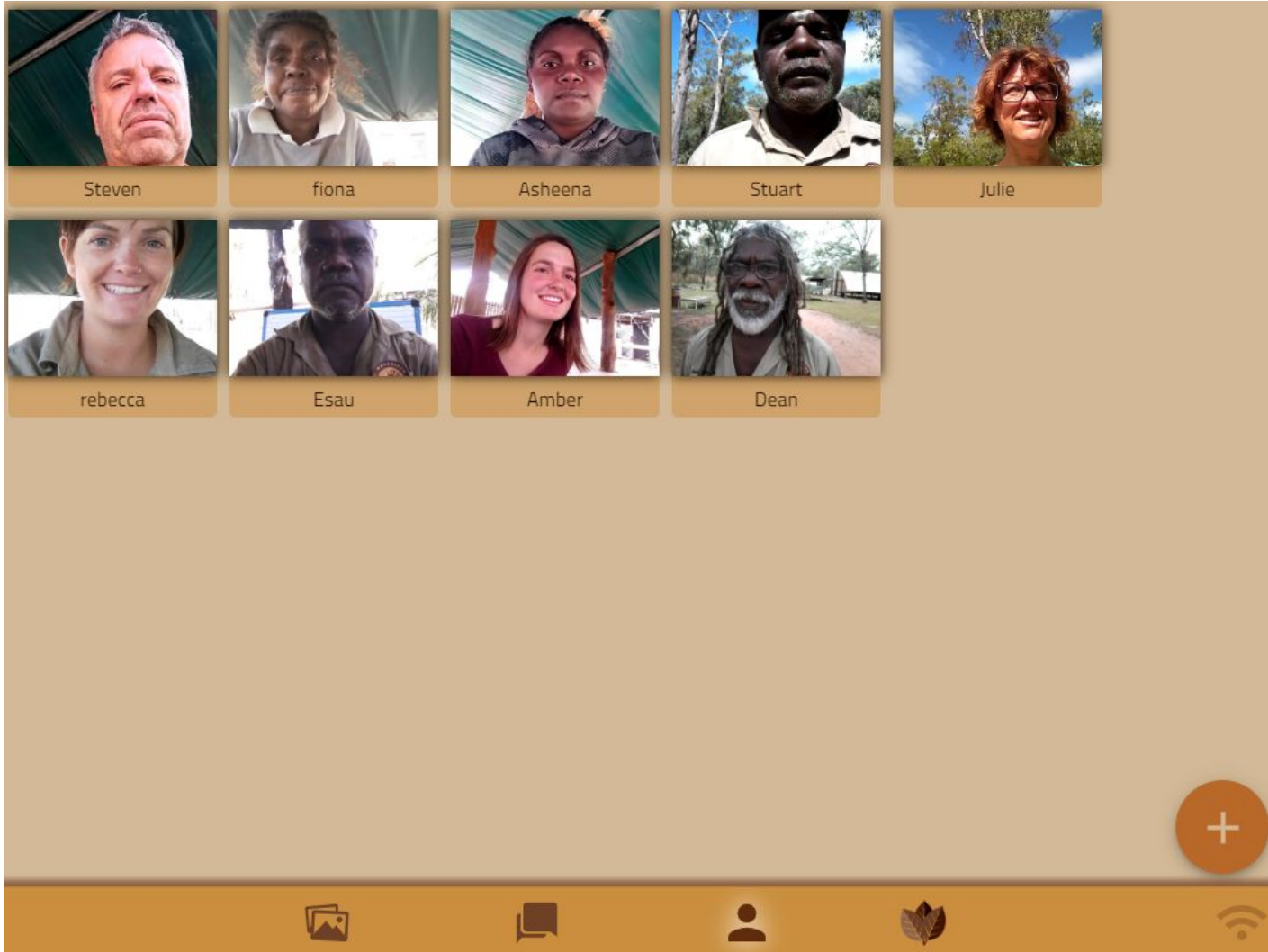- 9 hours' battery life
- dust and heat resistant to 40°C

Web Apps running on BushPi
Talk about images

Web Apps running on BushPi
Introducing yourself

Postscript: LanguageParty.org

stories in the original languages told by people who live in our midst