

GHANA DISH CONVERSION WORKSHOP

AH Hotel, East Legon
Accra - Ghana
21 -25 January 2019

PROGRAMME

Mobilization of
Radio Astronomy Technology
for Economic Development.



GHANA DISH CONVERSION WORKSHOP

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> welcome Message

Dear Delegates

It is with great pleasure that I welcome you officially to Ghana for the Dish Conversion Workshop. It will amaze you to know that participation for this august workshop extends across all boarders: every continent is represented here. It is gratifying therefore that you made it a choice to join us here to share expertise and experiences among colleagues, indications of how important the development of global astronomy and related technologies is dear to you.

This Workshop is the first of the series of four workshops in line this year to be hosted in Ghana (Dish Conversion), Mexico (Regional VLBI), Thailand (Big Data and Digital Technology) and the United Kingdom (Economic Development through Radio Astronomy), with financial support from the Global Challenges Research Fund of UK's Science and Technology Facilities Council. These workshops are under the auspices of the Development through Radio Astronomy Global Network (DRAGN) , a collaboration instituted through radio astronomy for development initiatives that has been established via the Newton Fund in Africa, Latin America and South East Asia, with Professor Melvin Gordon Hoare of Leeds University as the principal investigator. DRAGN is in partnership with six premium universities in the UK (see <https://dragn.info/>) in organizing the workshops.

Much has gone into organizing the workshop, and I wish to thank all parties and individuals who have contributed in diverse ways to make it such a great success. I particularly applaud members of the Local Organizing, Scientific Organizing and Steering Committees of the programme for the immense help right from the start of preparation period till now, and to all participants for cooperating to make the work easier.

On this note, I entreat you all to enjoy the workshop as much as we have enjoyed organizing it for you. I further beseech you to relish the enviable Ghanaian hospitality and rich culture.

I wish you all a good stay.



Dr. Bernard Duah Asabere
LOC Chair

> Key Speakers



Prof. Kwabena Frimpong Boateng
Minister, Ministry of Environment,
Science, Technology and
Innovation(MESTI)



Hon. Patricia Appiagyei
Deputy Minister, Ministry of
Environment, Science,
Technology and Innovation(MESTI)



Prof. B.J.B Nyarko
Director-General,
Ghana Atomic Energy
Commission(GAEC)



Prof. Dickson Adomako
Director
Ghana Space Science &
Technology Institute (GSSTI)



Anita Loots
Former Associate
Director SKA, SA



Kobus Cloete
Project Manager AVN,SARAO



Prof. Melviin Hoare
Chairman - Science Organising Committee (SOC)
Principal Investigator DRAGN





> FULL WEEK OVERVIEW

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|--------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------|
| 9:00 - 10:30 | Opening Ceremony Group photo | Case Study: Japan On-going reports: Mexico | Case Study: Peru On-going reports: Uruguay | Case Study: Latvia On-going reports: Goonhilly | Case Study: C-BASS VLBI networks Single Dish Science: Maser monitoring |
| 10:30 - 11:00 | BREAK | BREAK | BREAK | BREAK | BREAK |
| 11:00 - 12:30 | Case Study: Ghana | Mechanical aspects Q&A | Electrical aspects Q&A | RF aspects Q&A | Environment aspects Q&A |
| 12:30 - 2:00 | LUNCH | LUNCH | LUNCH | LUNCH | LUNCH |
| 2:00 - 3:30 | Country reports: Colombia Zambia Greece Tanzania | Tour of Kuntunse antenna/sight seeing | Country reports: Kenya Indonesia Algeria Breakouts discussion | Tour of Kuntunse antenna/sight seeing | Receiver aspects Q&A |
| 3:30 - 4:00 | BREAK | Group A/Group B | | Group A/Group B | |
| 4:00 - 5:00 | Country reports: Madagascar Portugal Ecuador | | Breakout sessions | | Breakout sessions |

> CONFERENCE HIGHLIGHTS

GHANA DISH CONVERSION WORKSHOP

DATE: 21st January 2019

VENUE: AH Hotel (Conference Room One)

OPENING CEREMONY:

08:00 Arrival of guests and registration

09:00 Opening ceremony starts

Opening prayer

- Dr. Bernard Duah Asabere (LOC Chair)

Introduction of Chairman

- MC: Mark Kwasi Sarfo (LOC Member)

Message from the Chairman

- Ing. Dr. Robert Adjaye (GSSTI Board Chair)

Welcome Address

- Prof. B.J.B Nyarko (Director-General,
Ghana Atomic Energy Commission)

Message from Host

- Prof. Dickson Adomako (Director, GSSTI)

Short Messages

- Prof. Melvin Hoare – SOC Chair Steering Committee

Keynote Address and opening of Workshop

- Prof. Kwabena Frimpong Boateng,
Minister, Ministry of Environment, Science, Technology and Innovation

Closing remarks

Chairman

Vote of thanks and Closing prayer

- Ms Joyce Koranteng-Acquah (LOC Member)

Media briefing

Group Photos

10:30 Snacks



> WORKSHOP PROGRAMME

MONDAY 21ST JANUARY 2019

| | | |
|---------|----------------------------------------|-----------------------------------------------------|
| 08:00am | Arrival and Registration | |
| 09:00 | Opening Ceremony - see separate agenda | |
| 10:30 | Coffee Break | |
| 11:00 | Anita Loots | Introduction to the Ghana dish conversion |
| 11:15 | Venkat | The Ghana dish conversion - the early years |
| 11:30 | Kobus Cloete | The Ghana dish conversion - current status |
| 11:45 | Bernard Asabere | The Ghana dish conversion - operations and upgrades |
| 12:00 | Ben Stappers | Pulsar backends and single dish science |
| 12:30 | Lunch | |
| 2:00 | Nectaria Gizani | Report from Greece |
| 2:30 | Daliso Banda | Report from Zambia |
| 2:50 | Juan Carlos Oliverios | Report from Colombia |
| 3:10 | Jiwaji Noorali | Report from Tanzania |
| 3:30 | Tea Break | |
| 4:00 | Rado Rasoamanana | Report from Madagascar |
| 4:20 | Domingos Barbosa | Report from Portugal |
| 4:40 | Ericson Lopez | Report from Ecuador |
| 5:00pm | Close | |



> **WORKSHOP PROGRAMME**
TUESDAY 22ND JANUARY 2019

| | | |
|--------|----------------------------------------|---------------------------------------------------------------|
| 9:00am | Kenta Fujisawa + Noriyuki Kawaguchi | The Japan dish conversions |
| 10:00 | Stan Kurtz | The on-going conversion in Mexico |
| 10:30 | Coffee Break | |
| 11:00 | Japie Ludick Rhoe Quaye | Mechanical aspects of dish conversion |
| 11:30 | David Gale | Dish metrology and dish surface accuracy |
| 12:00 | All | Q&A Session (Japie, David, Rhoe) |
| 12:30 | Lunch | |
| 2:00 | | Tour of Kuntunse antenna for Group A Sight seeing for Group B |
| 5:00pm | Close | |

WEDNESDAY 23RD JANUARY 2019

| | | |
|--------|-------------------------------------------------------|-------------------------------------------------------------------|
| 9:00am | Jose Ishituka + Joshua Villaverde | The Peru dish conversion |
| 10:00 | Manuel Caldas | The on-going conversion in Uruguay |
| 10:30 | Coffee Break | |
| 11:00 | Glen Taylor+ Emmanuel Mornoh + Pieter Pretorius | Electrical aspects of dish conversion inc. monitor and control |
| 11:30 | Rod Hine | Antenna control systems on old telecoms dishes |
| 12:00 | All | Q&A Session (Glen, Pieter, Mornoh, Rod, Joshua) |
| 12:30 | Lunch | |
| 2:00 | Geoffry Okeng'o | Report from Kenya |
| 2:20 | Taufiq Hidayat | Report from Indonesia |
| 2:40 | Nassim Seghouani | Report from Algeria |
| 3:00 | All | |
| 3:30 | Tea Break | |
| 4:00 | All | |
| 5:00pm | Close | |



> WORKSHOP PROGRAMME

THURSDAY 24TH JANUARY 2019

| | | |
|--------|-------------------------------|---------------------------------------------------------------|
| 9:00am | Andris Lesinsh | The Japan dish conversions |
| 10:00 | Melvin Hoare | The on-going conversion in Mexico |
| 10:30 | Coffee Break | |
| 11:00 | Salvatore Gioio + Joseph Nsor | RF aspects of dish conversion inc. RFI, timing and frequency |
| 11:30 | Daliso Banda + Alex Pollak | Feedhorn and OMT design |
| 12:00 | All | Q&A Session (Salvatore, Angela, Alex, Daliso) |
| 12:30 | Lunch | |
| 2:00 | | Tour of Kuntunse antenna for Group B Sight seeing for Group A |
| 5:00pm | Close | |

FRIDAY 25TH JANUARY 2019

| | | |
|--------|--------------------|---------------------------------------------------------------|
| 9:00am | Angela Taylor | Small dish conversions: C-BASS case study |
| 9:30 | Noriyuki Kawaguchi | Dish conversion and the importance of optical connected VLBI |
| 10:00 | Melvin Hoare | Single dish science: Maser monitoring |
| 10:30 | Coffee Break | |
| 11:00 | Glen Taylor | Environmental aspects of dish conversion inc. weather station |
| 11:30 | Bernard Asabere | Environmental aspects of dish conversion inc. optical fibre |
| 11:45 | Nkululeko Qwabe | Backends for the Ghana dish |
| 12:00 | All | Q&A Session (Glen, Bernard, Mornoh, Rhoe, Stan) |
| 12:30 | Lunch | |
| 2:00 | Alex Pollak | A C-band receiver for the Goonhilly 3 dish |
| 2:30 | Chao Liu | Digital backends |
| 3:00 | All | Q&A (Angela, Alex, Daliso, Chao, Salvatore, Nkululeko) |
| 3:30 | Tea Break | |
| 4:00 | All | Breakout Sessions |
| 5:00pm | Close | |



> LIST OF PARTICIPANTS

| NAME | AFFILIATION | EMAIL |
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Before



After





This workshop is organized by Development through Radio Astronomy Global Network and hosted by Ghana Space Science and Technology Institute with support from Science and Technology Facilities Council of UK's Global Challenges Research Fund in partnership with University of Leeds, University of Hertfordshire, University of Manchester, University of Oxford, University of Bristol and University of Central Lancashire.

The workshop will build partnerships between the various projects in development through radio astronomy that have already been established via the Newton Fund in Africa, Latin America and South East Asia. It will also establish and build connections that will help the sharing of experiences and lessons learned in how to translate the high tech skills of radio astronomy into local job creation and entrepreneurship.

