



RESEARCH FELLOWSHIP PROGRAMME CONCEPT NOTE

BACKGROUND

The Nigerian Communications Commission (NCC) is mandated to encourage effective research and development efforts by the Academia and other practitioners in the communications' industry, with the goal of building the indigenous capacity of manufacturers and improving the overall supply chain, within the Nigerian economy.

Available evidence suggest the existence of a wide gap between academic innovations and commercialisation of the developed ideas. Many research outputs, innovative ideas and product development from the nation's Higher Institutions that have potentials to provide solutions to societal sectoral problems, create new employment opportunities and support generate revenue within the ICT sector, have not been harnessed

Furthermore, Telecommunications Operating Companies are faced with the challenge of dearth of skilled Information and Communications Technology (ICT) graduates and most times, spend additional resources (time & money) providing new employees with the relevant skills to enable them perform requisite tasks under minimal supervision. Therefore, Research for Development (R4D) programme will impact not only Industry players and Academia, but also will address some socio-economic challenges of Nigeria.

As the Telecommunications Industry Regulator in Nigeria, the Commission encourages the collaborations between the Academia and Industry that are of mutual benefit. The Commission also support amongst other things, telecommunications-based research and innovations from tertiary institutions in the country that are practical, locally realizable and have clear potential of assisting the Telecommunications Industry, addressing the ever changing Industry needs and bridging the gap between the generation of ideas and commercialisation (entrepreneurship) of same in Nigeria.

Consequently, and as part of the Commission's objective of entrenching telecommunications-based innovations in sustaining growth of the Industry and enhancing the contribution of the Sector to national development, the Commission is instituting a Research Fellowship Programme in 2020. This Programme will advance the Academia – Telecommunications Industry Partnership through collaborative work on providing solutions to issues of emerging technologies and other Industry challenges.

OBJECTIVES

The overall objective of the Research Fellowship is to set up a platform for collaboration between the Commission and the Academia to address critical

Telecommunications/Information and Communications Technology (ICT) Industry issues. The Fellowship programme is expected to develop possible solutions that are capable of solving socio-economic challenges of the country. As the Commission continues to promote the Digital Economy agenda of the Federal Government, it becomes pertinent to engage all sectors (digital inclusion) in order to achieve the objectives of a digitalized Nigeria, of which the Telecommunications/ICT play critical roles.

The Research Fellowship programme aims at finding possible solutions to Telecommunications/ICT Industry issues, through extensive research, capable of promoting the goal of the Commission and overall sustainability of the entire ICT ecosystem.

The specific objectives of the Programme would include:

- I. Research in Emerging Technologies that will aid Regulatory activities and decisions of the Commission;
- II. To conduct investigations that would provide possible solutions for key current challenges facing the Industry;
- III. To independently undertake and develop appropriate methods and techniques for advanced research in Telecom matters, while managing associated staff contribution to the project;
- IV. To lead the production of high-quality research reports and publications as required by the R&D Department for dissemination to the wider academic community and ICT ecosystem;
- V. To promote synergy, integration and collaboration between the academia and industry experts in developing approaches required for turning academic ideas, research outputs and innovations into start-ups and new businesses.

FELLOWSHIP FOCUS AREA

- I. Nigeria's Digital Economy: Development of Framework and Roadmap for the participation of the Licensees and Consumers as well as associated Measurement Matrix, to be part of the global Digital Economy.
- II. Review 5G deployment plan and participate in the evaluation of proposed 5G Radio Interface Technology using simulation software to be purchased by the Commission as well as review Artificial Intelligence (AI) and Internet of Things (IoT) integration in Nigeria and suggest the regulatory measures for the Commission and other business opportunities/challenges for the licensees including impact of Electromagnetic Field (EMF) radiation of 5G on human and animal health.
- III. Determination of Spectrum Needs, Technical and Operational characteristics and Implementation Mechanisms and Railway Radio Communication Systems between Train and Trackside (RSST) in Nigeria. Determine also, Spectrum Use

and Needs by the Mobile service, except aeronautical mobile service in the band 470-694 MHz. This thematic areas shall include the core activities of the Commission ranging from Spectrum Research, ITU activities and Regulatory Functions.

- IV. Study of Existing Post-Quantum Cryptosystems and Identification of Requisite Applications and Services, challenges to its possible adoption in Nigeria in the era of Emergent/Disruptive Technologies.

TERMS OF REFERENCE

- I. Produce Reports on each of the Focus Areas highlighting the **new knowledge**
- II. Support R & D efforts of the Commission in general, including developing acceptable methodology for research in emerging technologies taking cognizance of international standardization bodies and guidelines on health & environmental impact.
- III. Benchmark relevant international organisation such as International Commission for Non-ionization Radiation Protection (INCIRP), Third Generation Partnership Project (3GPP), Institute of Electrical and Electronics Engineers (IEEE), World Health Organisation (WHO) and other relevant standardization bodies.
- IV. Prepare and Present quarterly reports of her/his activities to the Commission.
- V. Develop the capacities of R &D Department staff on conducting high impact research.
- VI. Prepare and present papers at conferences and journals. The Commission shall be adequately acknowledged in the publications;
- VII. Assist the Commission in assessing the feasibility of having an Industry peer reviewed journal
- VIII. Design a framework to support the direct transfer of current industry experience to students on return to her/his institution.

SCOPE OF WORK

- I. Conduct researches on the Focus Areas and evaluate the outputs from the researches;
- II. Develop laboratory procedures for effective utilisation of the Commission's Anechoic Chamber procured by the Commission.
- III. Highlight the latest developments in Electromagnetic Field (EMF) and health issues arising from emerging technologies including RSST
- IV. Develop a model to stimulate and assess the impact of new technologies (5G, IOT, AI etc) on Fixed wireless, Enhanced Mobile Broadband (eMBB), Massive Machine Type Communication, Ultra-reliable Low Latency Communication (uRLLC) etc.
- V. Identify the minimum safety requirement for the Nigerian Telecommunications Industry
- VI. The Research Fellows will present final reports and make a presentation at the end of their fellowship; the Reports must include references of books, journal, and other materials reviewed

- VII. Make recommendations on the Industry Peer-Review Journal, including identifying the relevant stakeholders to publish and review the research papers for publications;
- VIII. Be responsible for resolving problems affecting delivery of research projects and set standards by scoping projects and developing objectives of research work that will deliver in time and fulfill the essence of the grant award;
- IX. To attract external grant funding through consultancy and knowledge transfer activities in order to support independent research programmes that will coach and support the department in developing their research techniques;
- X. To assist with workshops and conference activities and to develop an external research profile and International research links through public engagement activities: and,
- XI. All agreed tasks must be completed with the 12 month duration of the Fellowship.

ENGAGEMENT

In addition to any agreed methodology adopted by the Research Fellow, the following should be integrated:

- I. The Job description of the Research Fellow shall include review of ITU/IET/IEEE Journals to make recommendations in the scope area of the Department he/she is posted to ensure it aligns with ITU standards and Global best practices.
- II. The Research Fellow undertakes work assigned to him and other research she/he desires in alignment with the objectives of the Fellowship.
- III. The Research & Development Department will coordinate the activities of the Research Fellow working with the appropriate Department(s) to ensure a smooth process of the program.
- IV. The Commission will provide an office space for the duration of 12 months for the Research Fellow. The Commission will **NOT** be responsible for her/his Accommodation, Transportation and Feeding expenses.

TIME FRAME FOR ASSIGNMENT

The Research Fellows will work full time with the Commission for a period not exceeding twelve 12 months (**non-renewable**) with the final report submission with the period.

PAYMENT TIMELINE

An annual stipend of Twelve Million Naira only (N12,000,000.00) will be given to the Research Fellow. Payments will be made in installments of Three Million Naira only (N3,000,000.00) every quarter of the year.

The First Quarter payment shall be paid in two installments of Two million on commencement of Fellowship, to aid the Research Fellow logistics (Accommodation/Feeding/Transportation) and One Million at the end of the Quarter, subject to meeting the agreed milestone.

ELIGIBILITY

To qualify for the Fellowship, candidates are required to submit their proposals, which must:

- Come from teaching Academics in Nigeria's tertiary Institution (Senior Lecturers and above) possessing a minimum of a PhD of at least five years in any Telecommunications related field.
- Evidence of publication in only high impact journals such as International Scientific Indexing (ISI)/SCI journals, etc with the most recent, not more than 2 years ago.
- Have a two-page executive summary on the focus thematic research areas, deliverables, work plan and methodology.
- Have a two-page summary on their understanding of the goals (aligned to the Focus Areas) of the Commission and how she/he would contribute to these goals during the fellowship programme as well as what would be her/benefit that would be shared with students upon return to the classroom.

The Research Fellow **MUST** submit a letter **upon award** of the Fellowship, from her/his Institution authorising the period of absence from the Institution.

SUBMISSION OF APPLICATION

Proposals should:

1. Describe in details the work plan to cover the Focus areas and how the Commission would benefit from the Fellowship programme
2. Demonstrate understanding of the impact of the Research Fellowship on the Telecommunications Industry, Nigerian Communications Commission, his/her tertiary Institution as well as the Research Fellow professional development.
3. List of deliverables/milestones from the Fellowship

Interested candidates are invited to submit SOFT copy of the Application to (drd@ncc.gov.ng) and two (2) HARD COPIES of their Curriculum Vitae (CV), research proposal, summary of previous research work and Application, on or before **5pm, 22nd January 2021**, to the address below.

The Executive Vice Chairman/CEO
Nigerian Communications Commission
Plot 423, Aguiyi Ironsi Street,
Maitama, Abuja
Attention: Director, Research and Development

Please note that any Application submitted after the deadline will automatically be rejected.