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**ROS GEO**  
Russian State Geological Company

ZARUBEZHGEOLOGIA

# TECHNICAL AND COMMERCIAL PROPOSAL

**GEOLOGICAL STUDY OF RIO MUNI AREA, THE REPUBLIC OF EQUATORIAL GUINEA  
STATE GEOLOGICAL MAPPING AT A SCALE OF 1: 200,000 WITH DETAILED SOLID MINERALS LOCATIONS FORECAST**

Presented for:

**Ministry of Mines and Hydrocarbons of  
The Republic of Equatorial Guinea**

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# 1

## MAIN GEOLOGICAL OBJECTIVES OF THE PROJECT

### CORE OBJECTIVES

- Create of a set of the State Maps having geological content at a scale 1:200 000 for Rio Muni;
- Evaluate mineral resource potential of Rio Muni;
- Reveal promising areas for readily marketable mineral deposits.

### BASIC TASKS

- Geological mapping in the Rio Muni at a scale 1:200 000; **metallogenic specialization of the main geological.**
- Run areal prospecting for solid commercial minerals; evaluation of metallogenic potential of areas promising for identification of solid commercial minerals: gold, base metals, diamonds, and uranium.
- Detailed **protecting works** at local ore mineralization sites with the purpose to identify objects of potential economic interest.

## 2

### CURRENT LEVEL OF GEOLOGICAL EXPLORATION OF RIO MUNI

2012 - Airborne geophysical multichannel survey by FUGRO Company in the Rio Muni area.

2010 – 2012 - Map compilation works by OOO ARC based on backdated geological materials, interpretation of satellite images, and limited numbers of field observations points.

The existing geological data created by OOO ARC has a number of key shortcomings, including:

- **very limited number of geological observation points and scouting sampling sites:** not sufficient to support the works at a scale of 1:200 000, which significantly reduces the possibility of ore objects delineation;

- **no interpretation of airborne geophysical data acquired by FUGRO Company**

The available geological materials will be used as a basis for further geological studies of the area (including prospect mapping drilling in unexposed areas), compilation of modern geological maps on the scale 1:200 000 (in GIS project), and delineation of the promising areas for identification of mineral deposits.

# 3

## SCOPE OF WORK

Geological mapping and accompanying prospecting will include the following works:

- Geological and geological prospecting traverses – 10 000 – 13 000 line km;
- Lithochemical prospecting of dispersion trains – 14 350 samples;
- Mineralogical prospecting (heavy mineral sampling of channel sand from watercourses) – 4825 samples;
- Mapping drilling using hand drills (portable drilling rigs) – 1 000 line km;
- Prospecting wells drilling in the areas of laterite occurrence - 2 000 line km;

Excavation:

trenches (studies of ore mineralization) – 600 line km;

prospecting pits (studies of placer mineralization) – 150 line km

# 4

## DELIVERABLES

### WHAT WILL OBTAIN THE CUSTOMER AS A WORK RESULTS

Set of updated state-of-the-art geological maps (including GIS) at a scale 1:200 000, including:

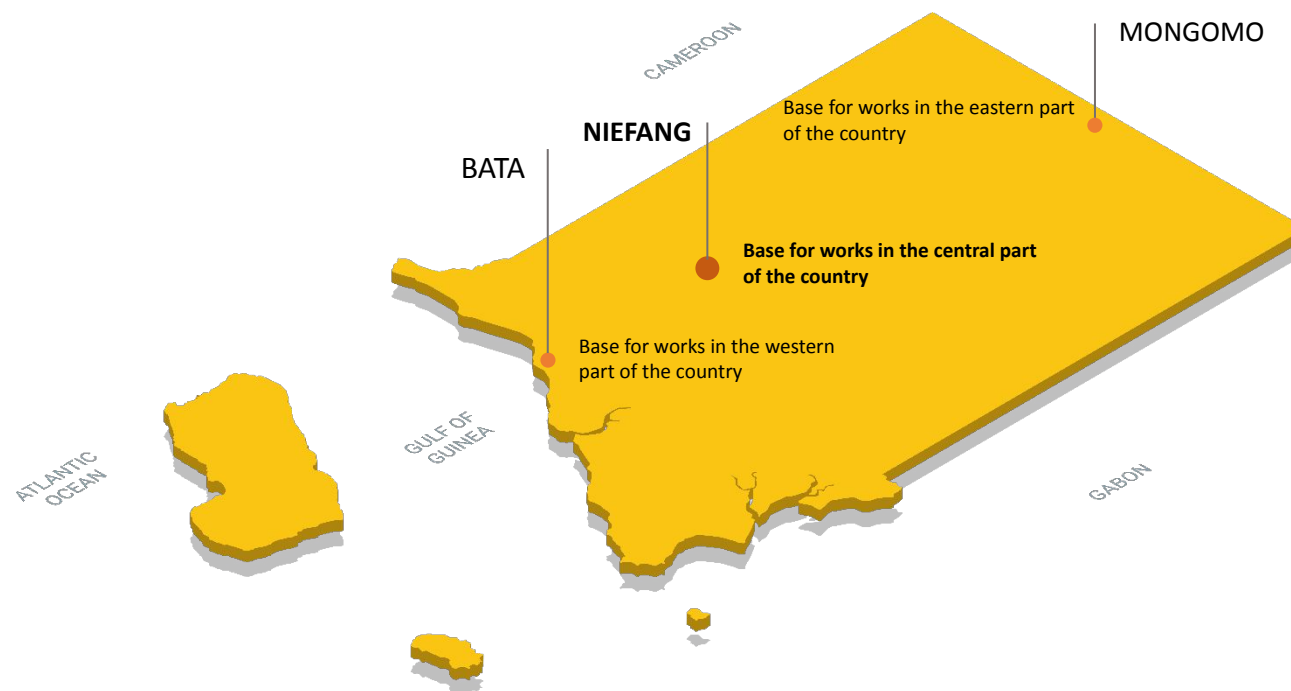
- Detailed Geological Maps at a scale 1:200 000 of the Republic of Equatorial Guinea (Rio Muni) — two sheets;
- Map of Minerals at a scale 1:200 000 of the Republic of Equatorial Guinea (Rio Muni) — two sheets;
- Map of Location Trends and Forecast of Mineral Occurrences at a scale 1:200 000 of the Republic of Equatorial Guinea (Rio Muni) — two sheets.
- Explanatory Notes to the Geological Map, the Map of Minerals, and the Map of Location Trends and Forecast of Mineral Occurrences at a scale 1:200 000 of the Republic of Equatorial Guinea (Rio Muni) — two sheets.
- Geological Maps of the promising subsoil areas at scales 1 : 2 000 – 1 : 10 000;
- Book of the promising objects ranked according to priority of further studies.

# 5

## ORGANIZATION OF WORK

### BASE LOCATION

It is planned to carry out geological studies using the permanent Geological base in Niefang city, where living and working areas are available for the whole working period, as well as additional bases in Bata and Mongomo towns for temporary accommodation of personnel during field works.



# 6

## WORK PLAN

### Work types:

Office work in RF (final stage)

4 seasons of field works (3 months each)

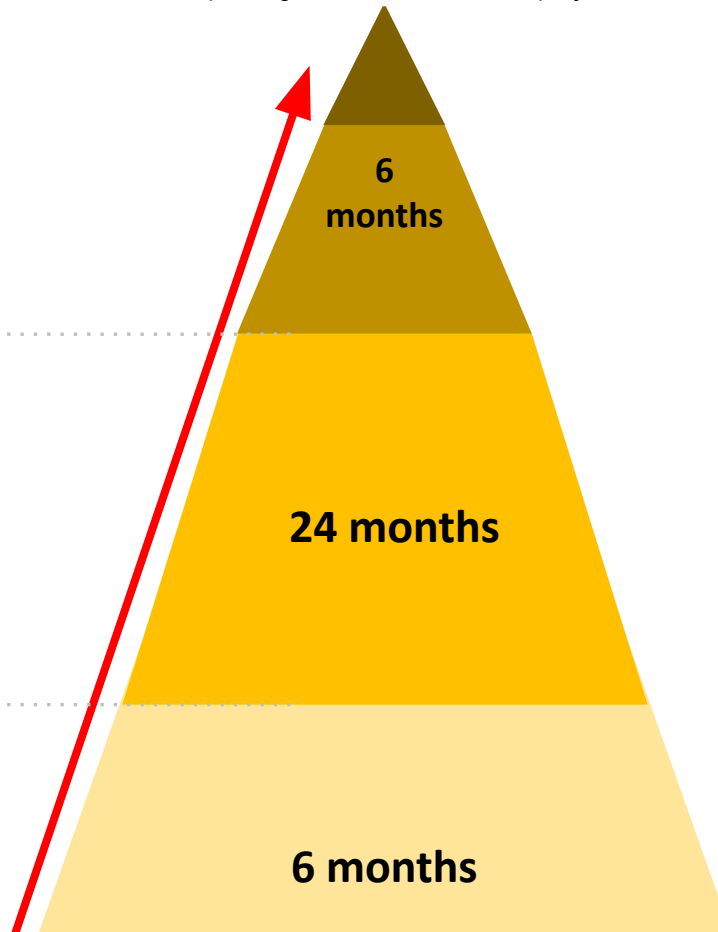
Office processing of the materials obtained during field works

Compilation of the preliminary Geological Map at a scale 1:100 000 over the area of 26 000 sq km.

Laboratory and analytical studies

Base outfitting, equipment procurement  
Office work in RF (pre-field study)

Prospecting activities of the next project



### Deliverables:

Geological Map on the scale 1:200 000 of the Republic of Equatorial Guinea, Map of Minerals on the scale 1:200 000  
Map of Trends of Location and Forecast of Mineral Occurrence (1:200 000)  
Explanatory Notes to the Geological Map, the Map of Minerals, and the Map of Trends of Location and Forecast of Mineral Occurrence

Maps of actual materials  
Sampling logbook: heavy mineral and lithochemical samples, and results of analyses.  
Bed rock sampling logbook  
Preliminary geological working map on the scale 1:100 000 for the area of 26 000 sq km  
Geological documentation on ground-based verification of airborne geophysical anomalies and prospecting and checking activities

Knowledge database for the Rio territory  
Promising areas location map in accordance with data of previous works Preliminary geological legend to the maps (1:200 000).  
Space photogeological maps on the scale (1:200 000)  
Scheme of geological and geophysical zoning (1:500 000).  
Technical project for implementation of work under the Contract.

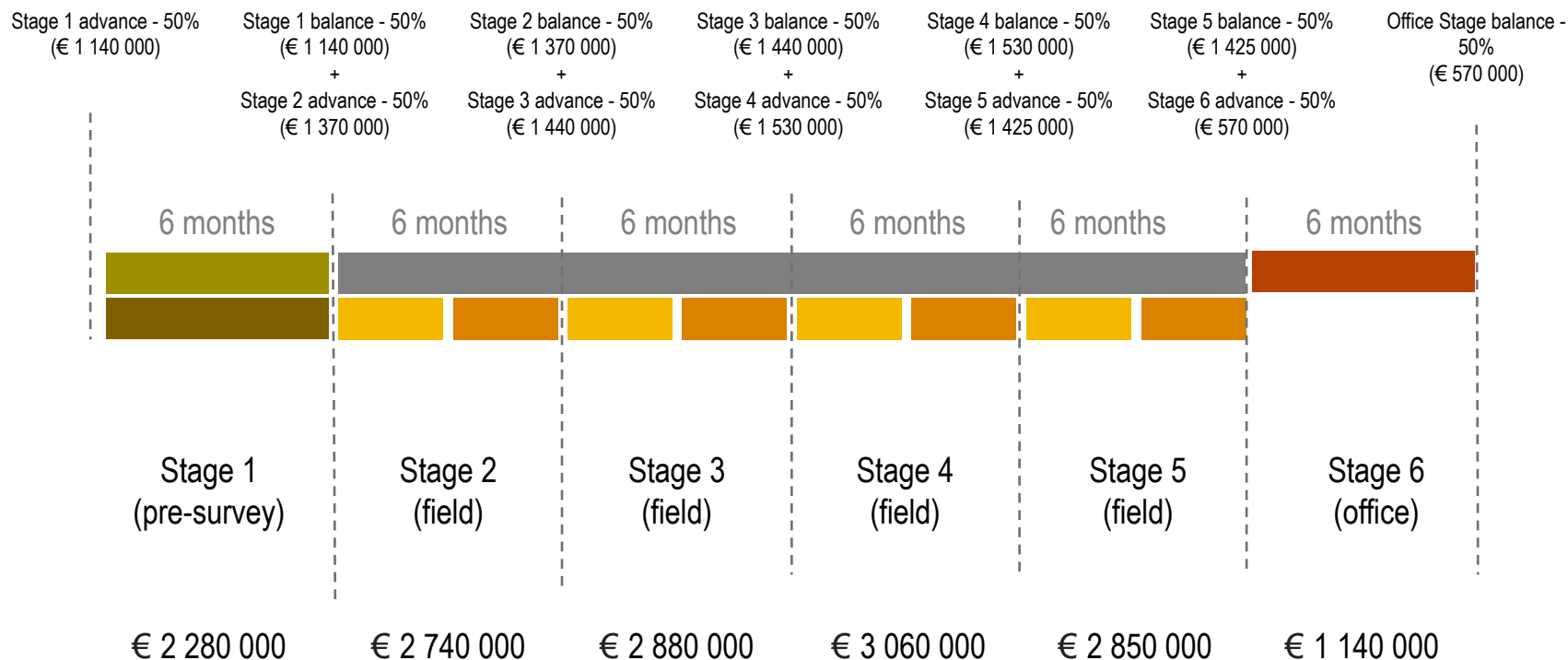
# 7

## WORK PLAN (SCHEDULE)

### STAGES

Duration of work:  
**36 months**

Total Cost of work:  
**14 950 000 EUR**










# 8

## Field Squads






### 4 FIELD SQUADS

#### TEAM 1

-  Head of exploration group
-  Senior geologist
-  Geologist
-  Geological engineer
-  3 workers





TOTAL: 7 persons

#### TEAM 2

-  Head of exploration group
-  Senior geologist
-  Geologist
-  Geological engineer
-  3 workers





TOTAL: 7 persons

#### TEAM 3

-  Senior mapping geologist
-  Geologist
-  Geological engineer
-  3 workers

TOTAL: 6 persons

#### TEAM 4

-  Senior mapping geologist
-  Geologist
-  Geological engineer
-  3 workers

TOTAL: 6 persons

# 9

## Project budget (key terms)

Description of costs	Estimated cost, EUR
Salary of specialists	4 324 197
Payroll tax	1 385 430
Subcontracted works (incl. drilling)	3 548 102
Materials	1 525 088
Special vehicles and equipment required for field and drilling operations	1 111 087
Support of field works	681 857
Office services	640 683
Air travels and other logistical costs	505 000
Rent of premises	188 300
Personnel medical insurance	18 600
Technical inspection	18 000
Medical examination	13 618
Consulting service, Russian specialists	12 000
Profit (7%)	978 037
<b>TOTAL, EUR</b>	<b>14 950 000</b>