



**INTERNATIONAL TELECOMMUNICATION UNION**

**ITU Support to Ukraine under the  
ITU Resolution 1408**

*ITU Office for Europe*

*CEPT meeting, 7 May 2024, Gdansk*

# Rapid and Damage Needs Assessment (2024)



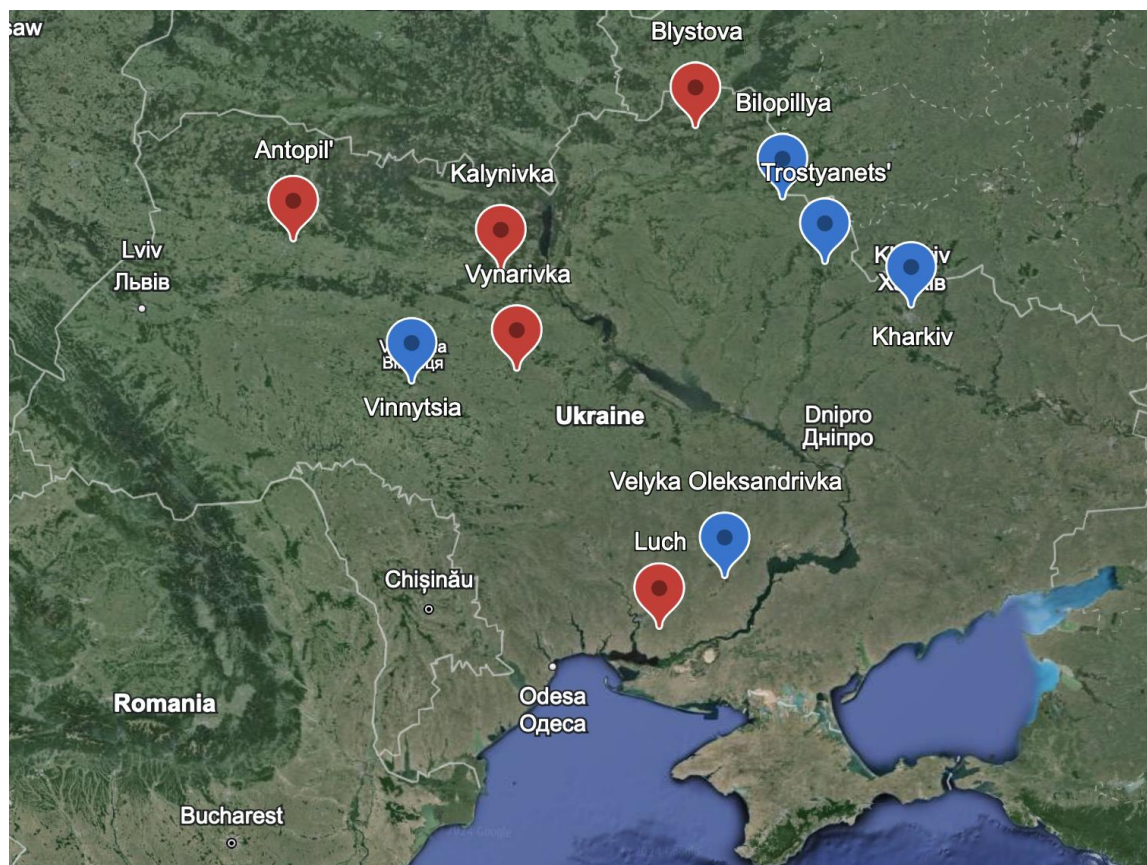
- The 3<sup>rd</sup> edition of the Rapid Damage and Needs Assessment (RDNA3) report is undertaken jointly by the World Bank, the United Nations, the European Commission, and the Government of Ukraine.
- For the second year, ITU's provided its input to the chapter on 'Telecommunications and Digital'.
- The full report was released on 15 February 2024 and serves as a guiding document for the international donor community to assist in Ukraine's reconstruction process.

*The total recovery and reconstruction need in the digital and telecom sector are estimated at US\$4.7 billion over 10 years*



## Primary Assessment of Rehabilitation Costs for Ten Broadcasting Stations in Ukraine

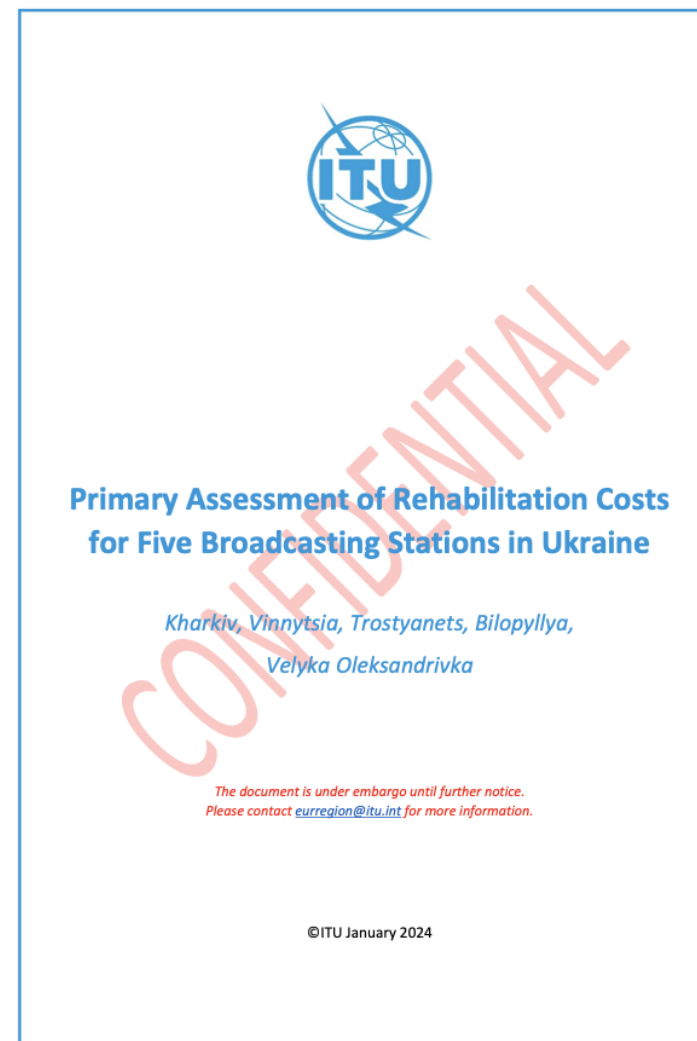
*Kharkiv, Vinnytsia, Trostyanets, Bilopyllya, Velyka Oleksandrivka, Kalynivka, Vynarivka, Luch, Blystova, and Antopil*



## Primary Assessment of Rehabilitation Costs for Five Broadcasting Stations in Ukraine

*Kharkiv, Vinnytsia, Trostyanets, Bilopyllya, Velyka Oleksandrivka*

*The assessment for Five Broadcasting Stations in Ukraine has been prepared thanks to the financial contribution to the Special Fund in Trust, enabling scale-up of the implementation of Resolution 1408, in particular **Japan** and the **Czech Republic**.*



# Executive Summary



- The assessment revealed the widespread destruction of critical infrastructure in the broadcasting stations of Bilopyllya, Kharkiv, Trostyanets, Velyka Oleksandrivka, and Vinnytsia.
- High-rise constructions, transmission equipment, and antenna-feeder systems have sustained severe damages, hindering the provision of telecommunication services and the broadcast of essential programs.
- A combination of cost estimate methods revealed the total projected cost for the **short-term immediate rehabilitation** of each broadcasting station:
  - STBS Kharkiv – 1 545 623 USD
  - STBS Vinnytsia – 1 278 980 USD
  - STBS Trostyanets – 337 079 USD
  - STBS Bilopyllya – 311 428 USD
  - STBS Velyka Oleksandrivka – 249 900 USD
- The estimates associated with **long-term reconstruction activities**, aligned with a build-back-better approach, range from 5.5 to 450 million USD, depending on the conceptual design.
- At the beginning of 2024, 3 out of 5 broadcasting stations were subjected to repetitive damages (Bilopyllya, Kharkiv, and Trostyanets). This changes the scope and the costs for the rehabilitations outlined in the ITU Primary Assessment as the assessment needs to be updated.

# Broadcasting Towers around the world

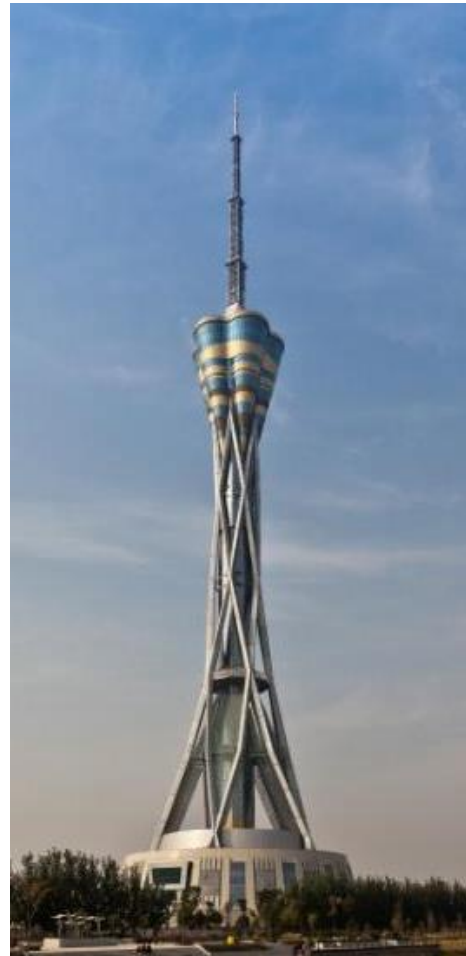
Guyed steel tube mast of [STBS Vinnytsia](#), Ukraine



Lattice steel hexagonal tower of [STBS Kharkiv](#), Ukraine



Self-supporting steel [TV-tower of Zhongyuan](#), China



Reinforced concrete / lattice broadcasting [tower of Tokyo](#), Japan



Self-supporting hyperboloid lattice [tower of Guangzhou](#), China



# Rehabilitation of STBS Kharkiv

Latitude: 50°02'36" N  
 Longitude: 36°14'07" E  
 Location: 1A Derevyanka Str., Kharkiv, 61103  
 Height: 240.7 meters  
 Type: lattice steel hexagonal tower  
 Weight: 1250 tones  
 Minimum load-bearing capacity: 13 tones  
 In exploitation since: 1981  
 Co-location: equipment of telecom operators, utility companies, emergency & special services  
 Territory Coverage: Kharkiv region – ex-ante 90%, ex-post 70%  
 Population Coverage: ~ 3 800 000 individuals



| Short-term immediate rectification activities:   | Estimated Cost (USD) | Timeline (months) |
|--|----------------------|-------------------|
| Existing tower/mast  |                      |                   |
| Tower mapping for an undocumented/poorly documented site and preparation of documentation necessary for tower load study, including qualified inspection of the tower/mast, with consideration of its height and complexity, ancillary equipment fitted to the structure, rendered by certified organization + Project Proposal with detailed BOM & BOQ. Serious tower reinforcement/modifications | ~105 000             | 3-6               |
| (Rectification works, including materials, and labor cost, related to restoration of lifting mechanisms and elevator, sealing the mast shaft, paintworks, etc. )   | ~ 1 060 000          | 6-18              |
| Refurbishment of the technical infrastructure facilities   | ~ 130 000            | -                 |
| Disposal cost (dismantling and debris removal)   | ~ 12 500             | -                 |
| Rectification of antenna-feeder systems and sound broadcasting transmitters (including cost of materials and excluding installation, and proof of performance testing)   | ~ 238 123            | 6-12              |
| <b>TOTAL</b>   | <b>1 545 623</b>     |                   |



| Long-term fundamental reconstruction activities, upon the end of the war:   | Range of Estimated Costs (USD) | Timeline (months) |
|---|--------------------------------|-------------------|
| New Tower / Mast  |                                |                   |
| Conceptual design and Project Proposal with detailed BOM & BOQ  |                                | 6-9               |
| Construction of a new tower/mast  |                                | 24-36             |
| Tower/mast rigging for complex structures.  | 5 500 000 – 450 000 000        |                   |
| (Cost includes fees paid to expert tower crews for equipment removal and installation, such as removing an existing antenna / transmission line and installing a replacement antenna/transmission line) |                                | 6-12              |
| <b>TOTAL</b>  | <b>5 500 000 – 450 000 000</b> |                   |

# Rehabilitation of STBS Vinnytsia

Latitude: 49°14'29.58" N  
 Longitude: 28°25'25.96" E  
 Location: 23 Maksimovicha Str., Vinnytsia, 21036  
 Height: 350 meters  
 Type: guyed steel tube mast  
 Weight: 431.6 tones  
 Minimum load-bearing capacity: 12.7 tones  
 In exploitation since: 1963  
 Co-location: equipment of up to 12 telecom operators, utility companies, emergency & special services  
 Territory Coverage: ~ radius of 80 km  
 Population Coverage: ~ 1 100 000 – 1 200 000 individuals



| Short-term immediate rectification activities:   | Estimated Cost (USD) | Timeline (months) |
|--|----------------------|-------------------|
| Existing tower/mast  |                      |                   |
| Tower mapping for an undocumented/poorly documented site and preparation of documentation necessary for tower load study, including qualified inspection of the tower/mast, with consideration of its height and complexity, ancillary equipment fitted to the structure, rendered by certified organization + Project Proposal with detailed BOM & BOQ. | ~ 55 000             | 3-6               |
| Serious tower reinforcement/modifications<br><br>(Rectification works, including materials, and labor cost, related to restoration of lifting mechanisms and elevator, sealing the mast shaft, tightening the guy ropes, paintworks, etc.)   | ~ 930 000            | 6-18              |
| Refurbishment of the technical infrastructure facilities   | N/A                  | -                 |
| Disposal cost (dismantling and debris removal)   | ~ 180 000            | -                 |
| Rectification of antenna-feeder systems, transmitters, and power generators (including cost of materials and excluding installation, and proof of performance testing)   | ~ 113 980            | 6-12              |
| <b>TOTAL</b>   | <b>1 278 980</b>     |                   |



| Long-term fundamental reconstruction activities, upon the end of the war:   | Range of Estimated Costs (USD) | Timeline (months) |
|---|--------------------------------|-------------------|
| New Tower / Mast  |                                |                   |
| Conceptual design and Project Proposal with detailed BOM & BOQ  |                                | 6-9               |
| Construction of a new tower/mast  |                                | 24-36             |
| Tower/mast rigging for complex structures.  | 5 500 000 – 450 000 000        |                   |
| (Cost includes fees paid to expert tower crews for equipment removal and installation, such as removing an existing antenna / transmission line and installing a replacement antenna/transmission line) |                                | 6-12              |
| <b>TOTAL</b>  | <b>5 500 000 – 450 000 000</b> |                   |

# Rehabilitation of STBS Trostyanets

Latitude: 50°28'40" N  
 Longitude: 34°55'30" E  
 Location: 50, Neskuchanska Str., Trostyanets, Sumy region, 42600  
 Height: 195 meters  
 Type: lattice steel tower  
 Weight: 480 tons  
 In exploitation since: 1985  
 Co-location: equipment of telecom operators, utility companies, emergency & special services  
 Territory Coverage: radius of 30 km, south-eastern part of Sumy region  
 Population Coverage: ~50 000 individuals



|  | Estimated Cost (USD) | Timeline (months) |
|--|----------------------|-------------------|
| <b>Short-term immediate rectification activities:</b>  |                      |                   |
| Existing tower/mast  |                      |                   |
| Tower mapping for an undocumented/poorly documented site and preparation of documentation necessary for tower load study.<br><br>(Qualified inspection of the tower/mast, with consideration of its height and complexity, including ancillary equipment fitted to the structure, rendered by certified organization + Project Proposal with detailed BOM & BOQ) | ~ 25 000             | 3-6               |
| Minor tower reinforcement/modifications<br><br>(Rectification works, including materials, and labor cost, related to replacement of metal structures and sealing the mast shaft, paintworks, etc.)   | ~ 105 000            | 6-12              |
| Refurbishment of the technical infrastructure facilities   | ~ 20 000             | -                 |
| Disposal cost (dismantling and debris removal)   | ~ 25 000             | -                 |
| Rectification of antenna-feeder systems (including cost of materials and excluding installation, and proof of performance testing)   | ~ 162 079            | 6-12              |
| <b>TOTAL</b>   | <b>337 079</b>       |                   |

## Long-term fundamental reconstruction activities: N/A

(It is not recommended to erect a new tower or mast due to relatively minor damages to the high-rise structure.)

# Rehabilitation of STBS Bilopyllya

Latitude: 51°08'31" N  
 Longitude: 34°19'30" E  
 Location: 15, Sumska Str., Bilopyllya,  
 Sumy region, 41800  
 Height: 192 meters  
 Type: lattice steel tower  
 Weight: 365 tons  
 In exploitation since: 1966  
 Co-location: equipment of telecom operators, utility companies, emergency & special services  
 Territory Coverage: radius of 30 km, northeastern part of Sumy region  
 Population Coverage: ~50 000 individuals



|  | Estimated Cost (USD) | Timeline (months) |
|--|----------------------|-------------------|
| <b>Short-term immediate rectification activities:</b>  |                      |                   |
| Existing tower/mast  |                      |                   |
| Tower mapping for an undocumented/poorly documented site and preparation of documentation necessary for tower load study.<br><br>(Qualified inspection of the tower/mast, with consideration of its height and complexity, including ancillary equipment fitted to the structure, rendered by certified organization + Project Proposal with detailed BOM & BOQ) | ~ 25 000             | 3-6               |
| Minor tower reinforcement/modifications<br><br>(Rectification works, including materials, and labor cost, related to replacement of metal structures and sealing the mast shaft, paintworks, etc.)   | ~ 80 000             | 6-12              |
| Refurbishment of the technical infrastructure facilities   | ~ 30 000             | -                 |
| Disposal cost (dismantling and debris removal)   | ~ 30 000             | -                 |
| Rectification of antenna-feeder systems (including cost of materials and excluding installation, and proof of performance testing)   | ~ 146 428            | 6-12              |
| <b>TOTAL</b>   | <b>311 428</b>       |                   |

## Long-term fundamental reconstruction activities: N/A

(It is not recommended to erect a new tower or mast due to relatively minor damages to the high-rise structure.)



# Rehabilitation of STBS Velyka Oleksandrivka

Latitude: 47°19'24.7" N  
 Longitude: 33°19'11.7" E  
 Location: 24 Kosmos Str, Velyka Oleksandrivka, Kherson region, 74100  
 Height: 74 meters  
 Type: guyed steel mast  
 Weight: 43 tones  
 Minimum load-bearing capacity: 1900 kg  
 In exploitation since: 1986  
 Co-location: equipment of up to two telecom operators, utility companies, emergency & special services  
 Territory Coverage: radius of 30 km  
 Population Coverage: ~ 10 000 individuals



|  | Estimated Cost (USD) | Timeline (months) |
|--|----------------------|-------------------|
| <b>Short-term immediate rectification activities:</b>  |                      |                   |
| Existing tower/mast  |                      |                   |
| Tower mapping for an undocumented/poorly documented site and preparation of documentation necessary for tower load study.<br><br>(Qualified inspection of the tower/mast, with consideration of its height and complexity, including ancillary equipment fitted to the structure, rendered by certified organization + Project Proposal with detailed BOM & BOQ) | ~ 35 000             | 3-6               |
| Minor tower reinforcement/modifications<br><br>(Rectification works, including materials, and labor cost, related to guy wire replacement /re-tensioning)  | ~ 70 000             | 6-12              |
| Refurbishment of the technical infrastructure facilities   | N/A                  | -                 |
| Disposal cost (dismantling and debris removal)   | ~ 130 000            | -                 |
| Rectification of antenna-feeder systems (including cost of materials and excluding installation, and proof of performance testing)   | ~ 14 900             | 6-12              |
| <b>TOTAL</b>   | <b>249 900</b>       |                   |

## Long-term fundamental reconstruction activities: N/A

(It is not recommended to erect a new tower or mast due to relatively minor damages to the high-rise structure.)



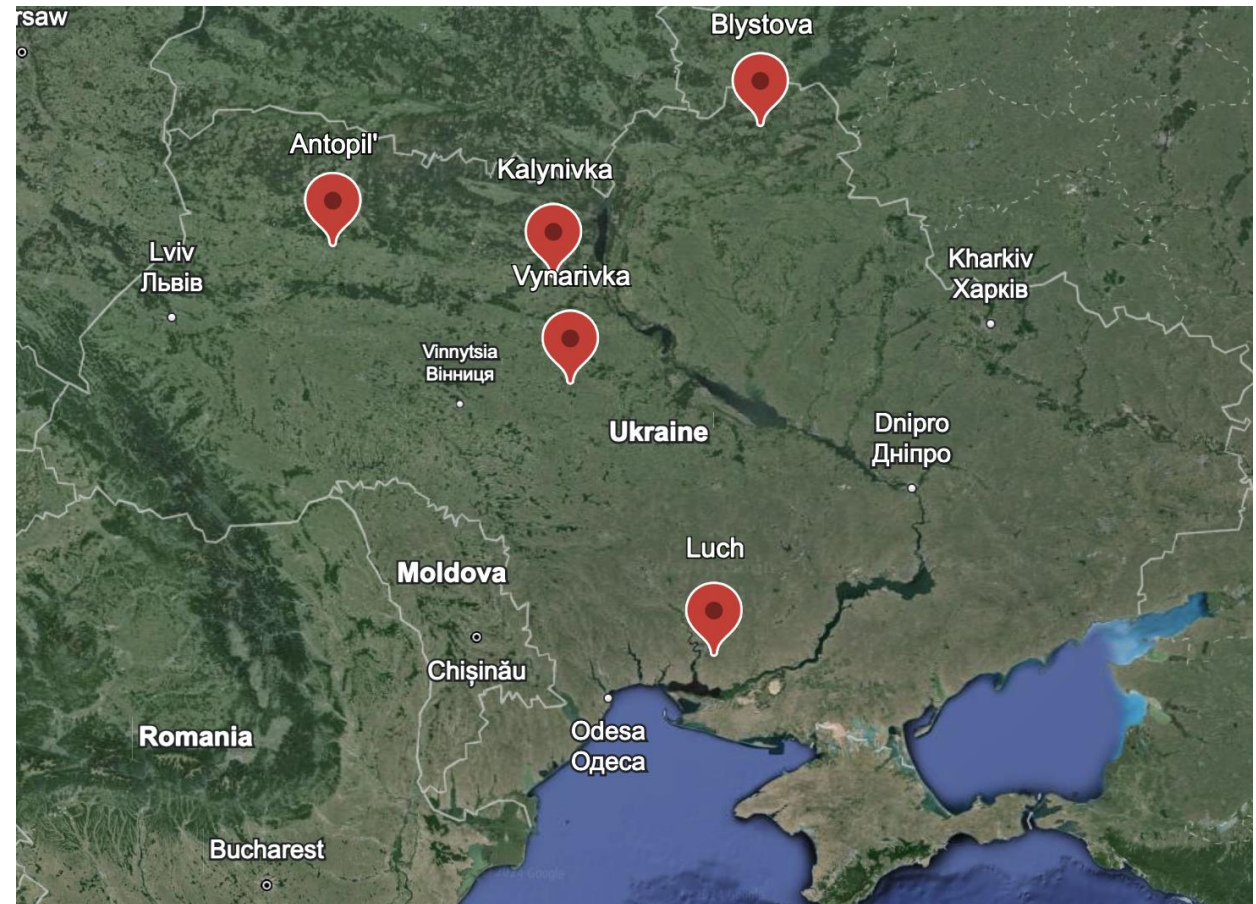
# PHASE TWO: Technical assistance to Ukraine (2024)



## Primary Assessment of Rehabilitation Costs for Five Stations of the Broadcasting Network of Ukraine

*Kalynivka, Vynarivka, Luch, Blystova, and Antopil*

*The assessment has been prepared thanks to the financial contribution to the Special Fund in Trust, enabling scale-up of the implementation of Resolution 1408, in particular **Japan** and the **Czech Republic**.*



# Technical assistance to Ukraine (2024)



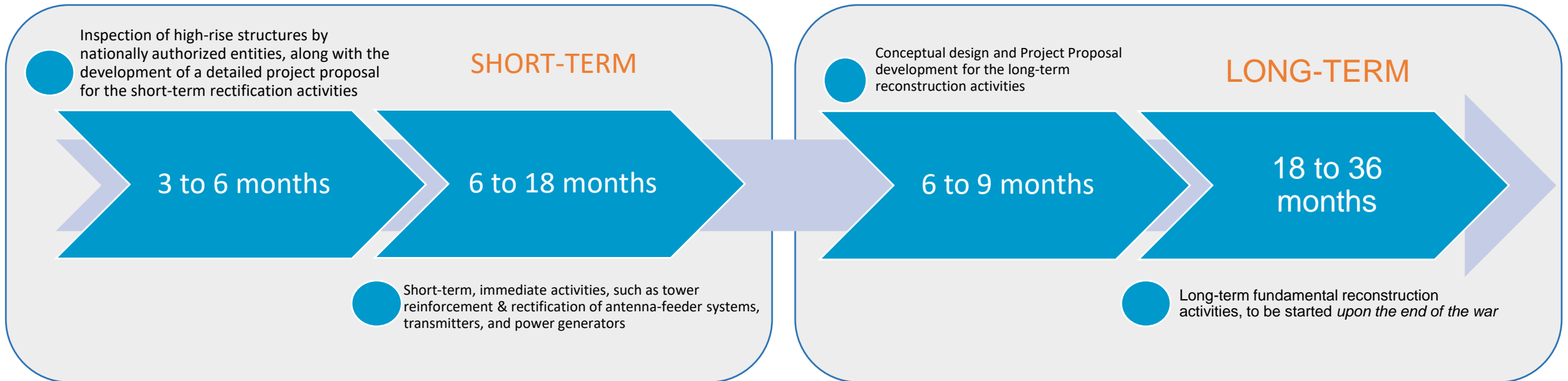
- The assessment revealed the widespread destruction of critical infrastructure in the stations of Kalynivka, Vynarivka, Luch, Blystova, and Antopil.
- High-rise constructions, technical infrastructure facilities, transmission equipment, and antenna-feeder systems have sustained severe damages, hindering the provision of telecommunication services and the broadcast of essential programs.
- A combination of cost estimate methods revealed the total projected cost **for the short-term immediate rehabilitation** of stations:
  - SCS Kalynivka – 1 286 700 USD
  - STBS Vynarivka – 355 310 USD
  - STBS Blystova – 263 740 USD
  - STBS Antopil – 1 116 390 USD
- The estimated cost of **the mid-term reconstruction of one station** (a cluster of five facilities/masts), subject to the successful demining of the territory:
  - STBS Luch – 4 733 000 USD
- The estimates associated with **long-term reconstruction activities**, aligned with a build-back-better approach, range from 5.5 to 450 million USD, depending on the conceptual design.

The anticipated timeline for the rehabilitation and/or reconstruction of each station, ranges from six to eighteen months for the short-term, immediate rehabilitation activities, from twelve to twenty-four months for the mid-term rectification, and from eighteen to thirty-six months for the long-term, fundamental reconstruction activities, following a build-back-better paradigm to ensure resilience and sustainable development.

# Timeline & Recommendations



- Based on the assessment, the report recommends a *phased approach* to restoration or reconstruction, outlining the specific technical requirements for each broadcasting station. The phases would have to include:



- The assessment report underscores the imperative of engaging a competent organization for drafting project proposals for each broadcasting station with detailed bill of materials (BOM) and bill of quantities (BOQ).
- It is essential for the parties concerned to regularly revisit and update cost estimates as the situation on the battlefield evolves, and new information becomes available.

# Executive training on 5G roll-out for Ukraine (2024)



- The National Commission for the State Regulation of Electronic Communications, Radio Frequency Spectrum, and the Provision of Postal Services has presented a keen interest in leveraging the expertise of the International Telecommunication Union for the efficient implementation of 5G technology in Ukraine.
- In response, ITU aims to support tailored capacity-building activities for Ukrainian officials involved in 5G implementation.
- The suggested ITU capacity-building activity will be delivered by ITU representatives of 3 ITU Sectors (Telecommunication Development Bureau, Radiocommunication Bureau, and Telecommunication Standardization Bureau), and by engaged professionals from the Member States as well as the private sector.
- *Preliminary Agenda:*
  1. *Technical standards related to 5G and beyond led by ITU BR (8 May 2024)*
  2. *Spectrum management and 5G roll-out led by ITU TSB (to be agreed)*
  3. *ICT infrastructure business planning for 5G networks led by ITU BDT (21 May)*
  4. *5G roll-out case studies from European countries (to be agreed)*
  5. *Industry perspective: Challenges, opportunities, and emerging trends in 5G deployment (to be agreed)*

# Coordination with International Partners



- ITU actively contributes to the activities and the regular meetings of the **United Nations County Team in Ukraine**.
- ITU conducts regular coordination **with the European Commission** on its ongoing and planned activities in the field of ICT and broadcasting infrastructure reconstruction.
- ITU has established coordination with **the Council of Europe Registers of Damages for Ukraine** team as well as **the European Broadcasting Union** to align the activities related to supporting Ukraine.
- Coordination has been established with **the OECD, European Investment Bank, and World Bank**.
- ITU remains committed to fostering the digitation in Ukraine in cooperation **with GiZ** under the umbrella of the GovStack initiative.



# Call for financial support



## The next steps of the project require support for:

- Conducting design, project works and the rehabilitation of the 5 stations from phase 1, estimated required sum: **3.8 Million USD.**
- Conducting design, project works and the rehabilitation of the 5 stations from phase 2, estimated required sum: **7.75 Million USD**

**All together: 11.55 Million USD**

- To update the assessment for stations subjected to repetitive damages and to conclude conducting the assessment of rehabilitation costs for the broadcasting sector and other operations related to UKR:

**1.2 Million USD**

**Support these activities by providing a financial contribution to the Special Fund in Trust,  
enabling scale-up of the ITU actions addressing the resolves of the ITU Council Resolution 1408**

Union Internationale des Télécommunications  
UBS Switzerland AG Case Postale 2600CH - 1211 Genève 2 (Suisse)  
SWIFT CODE: UBSWCHZH80A Account No.: 240-C8108400.2  
IBAN: CH58 0024 0240 C810 8400.

# Call for pledges to facilitating the rehabilitation



Support these activities by



**Partner2Connect**

Submitting a pledge/commitment to the [ITU Partner 2 Connect Digital Coalition](#), using the online system, specifically indicating relevancy of the pledge (focusing on one of four areas Access, Adoption, Value Creation, Acceleration) to the Resolution 1408; The list of existing pledges can be accessed at [ITU web-page](#) dedicated to activities related the Resolution 1408.

**As for now 12 stakeholders have submitted the pledges with an overall envelope of collected commitments amounts over 740 million USD: VEON, Poland, Lithuania, Spain, Sweden, Estonia, The Republic of Slovenia, Japan, The European Union, United States of America, Germany, United Kingdom of Great Britain and Northern Ireland.**

# Thank you!

The ITU Office for Europe ([eurregion@itu.int](mailto:eurregion@itu.int)) remains at your disposal, should you need any additional information or further guidance.