Annex 1

Progress report
on the implementation of the communications network in TETRA standard within the Ministry of Internal Affairs according to the MIA action plan regarding the implementation of the communications network in TETRA standard approved by MIA order no. 401 of December 29, 2017

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
1.	**Design of the TETRA network**	1.1 Evaluation and analysis of the existing TETRA network, adjustment of the Feasibility Study	STI DMI of MAI								- analysis report	900,00	Within the approved budget	**ACCOMPLISHED** On December 21, 2017, the Analysis Document was received and adjustment of the Feasibility Study no. MD-170001-RF. The analysis of the existing tetra network took place on 06.03.2018 finished with the evaluation report no. MD-MOI-1800004GD from 29.03.2018 According to the contract no. 273AP from 06.12.2017
		1.2 Technical design of the radio relay links required for the interconnection of the basic states (type of connection, equipment specifications, technical design)	STI DMI of MAI								- detailed project			**ACCOMPLISHED** The IP & DCN Upgrade and Design project for the transmission network was carried out and handed over by Motorola Solutions. The document contains all the technical details of the data transmission network.
		1.3 Approval of the candidate locations for the location of the base stations	STI IGP								- technical project			**ACCOMPLISHED** In February-March 2018, representatives of Motorola Solutions and the TSI conducted audit visits to a number of candidate locations (communications towers) for the installation of communications equipment. These belong to both the Ministry of Interior and the national telecommunications operators. Following the audit, the 82 locations necessary for the installation of microwave and TETRA equipment were selected and approved by mutual agreement. Technical projects were carried out for 42 locations that were approved by the Ministry of Interior, Motorola and the telecommunications operators in the Republic of Moldova for the installation of TETRA equipment for 2018. Technical projects were carried out for 20 locations that were approved by the Ministry of Interior, Motorola and the telecommunications operators in the Republic of Moldova for the installation of TETRA equipment for 2019.
		1.4 Technical design for	STI								- technical project			**ACCOMPLISHED**

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
2.	**Operationalization of the TETRA network**	the installation of base stations and MSO (electric, shelter, Tetra antennas)										170 000.00	Within the approved budget, other financial sources	The design of the new tetra system was executed. The project "TETRA System Design" no. MD-MO1-1800005-SD of 23.06.2018 According to the contract no. 273 AP from 06.12.2017
		2.1 Conclusion of the contract with equipment supplier	DMI of MAI IPG								- contract signed			**ACCOMPLISHED** The trilateral contract MAI (Beneficiary), IGP (Supplier) and Motorola Solutions (Supplier) was concluded, contact no. 273 AP from 06.12.2017. Based on this contract, the realization of the turnkey TETRA network is foreseen but also the updating of the existing network and the interconnection with the resulting TETRA infrastructure. The value of the contract is 6,929,226.91 Euro without VAT
		2.2 Leasing of technological spaces for the location of TETRA network equipment	DMI of MAI STI IGP								- contracts signed			**ACCOMPLISHED** For the lease of the technological spaces by the TSI, 24 technical expertises of the radiocommunication towers were performed according to the contract no. 42/18 of June 28, 2018 for the acquisition of the expertise services of the communication towers regarding the possibility / impossibility of locating the equipment. For 2019, 22 technical expertises of the radiocommunication towers of the telecommunications operators were performed. The TSIs have concluded lease agreements for technological spaces with IS Radiocomunicatii, Moldcell, Orange and Moldtelecom for all locations where TETRA equipment has been installed. For 2020, additional agreements have been concluded with national telecommunications operators for the new locations. For the year 2021, by the TSI of the AI, the procedure for concluding the necessary contracts for the shared use of the infrastructure of the communication networks (technological spaces and electricity), which is managed by the national economic operators, was initiated: location, SA "Moldcell" - 2 locations, SA "Moldtelecom" - 14 locations, "Orange Moldova" SA - 31 locations, IS "Radiocomunicatii" - 11 locations.
		2.3 Realization of the radio coverage for servicing the district centers at the level of portable terminal *	STI DMI of MAI								- min. 80% of coverage for portable terminals			**ACCOMPLISHED** According to the contract no. 273AP of 06.12.2017 with Motorola Solutions for the realization of the radio coverage and the operationalization of the TETRA system in 2018, the following were realized: - delivery of 23 MTS4 base stations; - delivery of 12 basic Statyy MTS 1 with the whole set of accessories; - 26 radio relay connections necessary for the interconnection of the 35 base stations were delivered; - 2 Control Sites were installed and configured; - the TETRA Management and Switching Center (SwMI) hardware and licenses (primary Zone) was delivered and operationalized; - the existing TETRA network was upgraded to IGPF; - was delivered and operationalized TETRA Management and Switching Center

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
														(SwMI) hardware and licenses (secondary Zone); - the SwMI equipments were installed and put into operation in the complete configuration with 2 geo-redundant zones in the MSO A and MSO B locations - the migration of the databases and the 36 existing base stations was performed in the new system; In 2019, the following were achieved: - delivered 16 MTS 1 base stations with the whole set of accessories; - 14 radio relay connections necessary for the interconnection of the 16 base stations were delivered; - 2 Control Sites were installed and configured; - the radio coverage of Chisinau International Airport was realized; For the good functionality of the system, the location of the equipment from the TETRA dispatcher was reorganized; In the TETRA dispatcher were installed: Dispatcher Console, NMT Console (Network Management Terminal), AVL Gina Console, DL Console (Discrete Listning), Replay Station Console. In 2020, the following were achieved: The locations for the installation of MTS-1 and MTS-4 Base Stations were identified - 15 pcs. - The contracts for the lease of the technological spaces and electricity on the economic operators SA Orange, SA Moldcell, SA Moltelecom and IS Radiocomunicatii were concluded. - The technical expertise of the communication towers for the installation of the equipment was performed. - The last delivery of the equipment according to the contract was received. 15 base stations were installed and put into operation. - The locations for the installation of 8 MW (microwave) for the creation of the redundancy of the data transmission networks in the TETRA MAI radiocommunication system were identified. - The interconnection of the TETRA radiocommunication network with VoIP (IP telephony) of the Ministry of Interior was performed. - Travels made for commissioning and acceptance of equipment installation works in order to modernize TETRA, LAN and WAN. - 8 MW (microwaves) were installed to create the redundancy of the data transmission networks in the TETRA MAI radiocommunication system. - The interconnection of MSO A (IGPF) with MSO B (Traian, 23/1 TSI of MAI) was performed through optical fiber. - Travels made for commissioning and acceptance of equipment installation works. - Carrying out the radio coverage measurements at national level which according to the constitution parts 96.4% for the portable stations and 99.8% for the mobile stations and perfecting the acceptance ratio with No. E181105-00-AT1 of 01.10.2020.
		2.4 Implementation of the radio coverage for servicing the national roads at the level of portable terminal *	STI								- min. 80% of coverage for portable terminals			**ACCOMPLISHED** According to the contract no. 273AP of 06.12.2017 with Motorola Solutions for the realization of the radio coverage and the operationalization of the TETRA system in 2018, the following were realized: - delivery of 23 MTS4 base stations; - delivery of 12 basic Statyy MTS 1 with the whole set of accessories; - 26 radio relay connections necessary for the interconnection of the 35 base stations were delivered; - 2 Control Sites were installed and configured; - the TETRA Management and Switching Center (SwMI) hardware and licenses

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
														(primary Zone) was delivered and operationalized; - the existing TETRA network was upgraded to IGPF; - was delivered and operationalized TETRA Management and Switching Center (SwMI) hardware and licenses (secondary Zone); - the SwMI equipments were installed and put into operation in the complete configuration with 2 geo-redundant zones in the MSO A and MSO B locations - the migration of the databases and the 36 existing base stations was performed in the new system; In 2019, the following were achieved: - delivered 16 MTS 1 base stations with the whole set of accessories; - 14 radio relay connections necessary for the interconnection of the 16 base stations were delivered; - 2 Control Sites were installed and configured; - the radio coverage of Chisinau International Airport was realized; For the good functionality of the system, the location of the equipment from the TETRA dispatcher was reorganized; In the TETRA dispatcher were installed: Dispatcher Console, NMT Console (Network Management Terminal), AVL Gina Console, DL Console (Discrete Listning), Replay Station Console. The radio coverage will be calculated after the installation of the equipment to be delivered in 2020. - Testing of coverage areas with radio signal was performed. As a verification measure is the radio signal coverage of all police inspectorates and national roads. Results - 99.8% of the surfaces tested for mobile stations made at national level.
		2.5 Implementation of the radio coverage for servicing the Police inspectorates within the district centers at the level of portable terminal *	STI								- min. 80% of coverage for portable terminals			**ACCOMPLISHED** According to the contract no. 273AP of 06.12.2017 with Motorola Solutions for the realization of the radio coverage and the operationalization of the TETRA system in 2018, the following were realized: - delivery of 23 MTS4 base stations; - delivery of 12 basic Statyy MTS 1 with the whole set of accessories; - 26 radio relay connections necessary for the interconnection of the 35 base stations were delivered; - 2 Control Sites were installed and configured; - the TETRA Management and Switching Center (SwMI) hardware and licenses (primary Zone) was delivered and operationalized; - the existing TETRA network was upgraded to IGPF; - was delivered and operationalized TETRA Management and Switching Center

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
														(primary Zone) was delivered and operationalized; - the existing TETRA network was upgraded to IGPF; - was delivered and operationalized TETRA Management and Switching Center (SwMI) hardware and licenses (secondary Zone); - the SwMI equipments were installed and put into operation in the complete configuration with 2 geo-redundant zones in the MSO A and MSO B locations - the migration of the databases and the 36 existing base stations was performed in the new system; In 2019, the following were achieved: - delivered 16 MTS 1 base stations with the whole set of accessories; - 14 radio relay connections necessary for the interconnection of the 16 base stations were delivered; - 2 Control Sites were installed and configured; - the radio coverage of Chisinau International Airport was realized; For the good functionality of the system, the location of the equipment from the TETRA dispatching office was reorganized; In the TETRA dispatcher were installed: Dispatcher Console, NMT Console (Network Management Terminal), AVL Gina Console, DL Console (Discrete Listning), Replay Station Console. - Testing of coverage areas with radio signal was performed. As a verification measure is the radio signal coverage of all police inspectorates and national roads. The act regarding the radio coverage is registered with no. E181105-00-CS of 01.10.2020.
		2.6 Installation and configuration of MSO. Interconnection with the existing MSO of IGPF	STI IGPF								- full integration - functional system			**ACCOMPLISHED** - the TETRA Management and Switching Center (SwMI) hardware and licenses (primary Zone) was delivered and operationalized; - the existing TETRA network was upgraded to IGPF; - was delivered and operationalized TETRA Management and Switching Center (SwMI) hardware and licenses (secondary Zone); - the SwMI equipments were installed and put into operation in the complete configuration with 2 geo-redundant zones in the MSO A and MSO B locations - the migration of the databases and the 36 existing base stations was performed in the new system; - all base stations under IGPF management have been reconfigured and updated and passed die E1 to Ethernet.
		2.7 Acceptance of equipment, testing of TETRA network functionallity	DMI of MAI STI IGP IGPF								- working group set up - acceptance and testing documents			- Working group set up. - The acceptance documents registered with Nr. E181105-00-AT1 of 17.09.2020.
3.	**Improving the staff skills in administration, maintenance and use of TETRA network**	3.1 Defining the training needs	STI IGP								- courses identificed	1 500.00	Within the approved budget	**ACCOMPLISHED** Training courses for the administration and maintenance of the TETRA network were identified as necessary; Courses of configuration and administration of radio relay networks have been identified.
		3.2 Taking over the good practices in administration and use of TETRA systemn	STI								- study visits made			**ACCOMPLISHED** In accordance with the provisions of the MIA provision no. 18/1417 of 19.11.2018 "Regarding the participation of the MIA representatives in the working visit regarding the takeover of the experience in the field of developing the radiocommunication network in TETRA standard", during November 20-22, 2018, the delegation of the Ministry of Internal Affairs traveled to Bucharest, Romania, in the following composition:

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
														- Turcanu Constantin, Deputy Head of the Information Technology Service of the Ministry of Interior; - Putere Alexandru, head of the Radiocommunication Directorate of the MIA TSI; - Burdila Ion, senior specialist of the Radiocommunication Operating Systems Section of the DR of the MIA TSI. - Renita Ion, main specialist of the Representation and Contestation Service of the Legal Department of the MIA TSI. - Valeriu Micleusanu, main specialist of the Political Directorate for preventing and combating crime of the Ministry of Interior. During the working visit, the delegation met with the management of the Special Telecommunications Service of Romania. Thus, during the meetings held both with the management of the Service and with the delegates of the institution by fields, questions were addressed regarding the legal framework underlying the TETRA network in Romania, as well as the legislative - normative framework, which will be developed and will remain based on the functionality of the TETRA network in the Republic of Moldova. Also addressed were the topics related to the development of standard operational procedures for resource sharing, fleet management (fleetmaping management) and system management, certification procedures for all categories of equipment and thermal, procedures for creating / completing forms for the needs required by user for the acquisition of terminals, as well as other topics that serve as a basis for the acquisition of terminals, as well as other topics that serve as a basis for the implementation and development of the radio network in TETRA standard.
		3.3 Implementation of training sessions for users	STI IGP								- training sessions implemented			**ACCOMPLISHED** - Between March 26-29, 2018, a training session was held for the programming and use of TETRA terminals where the responsible engineers from STI, INP, IGPF, IGSU participated who, in turn, train the users to hand over the terminals to use. During the following years, once the employees are equipped with radio terminals, user training sessions will be held. - The instruction for the use of radio terminals has been elaborated, which will be approved in accordance with the network operation regulations. - In the periods 21-24.07.2020, 28-31.07.2020 and 22-25.09.2020, by the employees of the MIA TSI were organized online courses, of continuous training of the guard personnel and dispatchers (130 trained employees), on the topic "The TETRA system (stationary and portable radio stations), possibilities and technical capacities, as well as their use in different service situations".
		3.4 Implementation of training sessions for technical and administration staff	STI								- training sessions, min. 10 employees			**ACCOMPLISHED** - Between September 10-14, 2018, the Ericsson MINI-LINK Indoor Units M17 Maintenance and TroubleShooting Course was conducted. The course was attended by 8 employees of the TSI. All employees have been certified by Ericsson. According to the MIA provision no. 18/1355 of 05.11.2018, regarding the participation of the MIA representatives in the training courses regarding the improvement of the personnel capacities in the administration. maintenance and use of the TETRA network, by MIA employees:

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
														- Erhan Mihail, Deputy Chief of the DSMT to DGMNO to IGPF to the MIA, Chief Inspector; (delegation period 25.11-13.12) - Rusu Marcel, main specialist of the TETRA administration section of DSMT of DGMO, inspector; (delegation period 28.11-13.12) - Putere Alexandru, Head of the Radiocommunication Directorate of the MIA TSI, commissioner; (delegation period 25.11-13.12) - Mihaiescu Denis, Head of the Radiocommunication Operating Systems Section of the DR of the MIA TSI, Chief Commissioner; (delegation period 25.11-13.12) - Spinu Alexandru, Head of the TETRA Dispatching Service of the DR of the MIA TSI, senior inspector; (delegation period 25.11-13.12) - Elas Valeriu, head of the ICT infrastructure administration department, Information Technology Services Department, MIA TSI; (delegation period 25.11-06.12) - Burdila Ion, senior specialist of the Radiocommunication Operating Systems Section of the DR of the MIA TSI, senior inspector; (delegation period 28.11-13.12) - Manea Mihail, specialist of the Radiocommunication Operations Systems Section of the DR of the MIA TSI, inspector; (delegation period 28.11-13.12) - Mitev Constantin, Head of the Digital Systems Section TETRA of the DR of the TSI of the MIA, inspector; (delegation period 04-13.12) - Gutu Mihail, senior specialist of the TETRA digital systems section of the DR of the MIA TSI, senior inspector; (delegation period 25.11-13.12) - Litvinenco Nicolae, senior engineer of the TETRA digital systems section of DR and STI of the Ministry of Interior, senior inspector; (delegation period 25-29.11) - Gorobet Alexandru, specialist of the TETRA digital systems section of the DR of the STI of the MIA, inspector; (delegation period 25.11-13.12) - Ghenadie Childescu, senior specialist of the Technical and Telecommunications Service of the SDAL of the INP of the IGP of the MIA. (delegation period 25-29.11) - Maluda Alexandru, main specialist of the BPDS "Fulger" Transmission Service of the IGP, inspector; (delegation period 25-29.11) the service trip was made to participate in the training courses. The training courses took place in Germany, Berlin, between 26.11-12.12.2018, The course was structured in 4 different models: 1. TETRA radio terminal programming - 3 days; 2. R9.0.1 X-Core configuration and administration - 3 days; 3. Maintenance and Troubleshooting of dispatcher consoles R9.0MCC7500 - 3 days; 4. Installation, maintenance, Troubleshooting and configuration of MTS4 and MTS2 base stations;

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
														10 engineers were trained in each module. The cost of the course is covered by the contract no. 273AP from 06.12.2017
4.	**Equipping employees with communication equipment**		STI IGP								- terminals purchased - terminals distributed	75 000,00	Within the approved budget, other financial sources	**ACCOMPLISHED** According to the contract no. 273AP of 06.12.2017, 190 portable radio terminals MTP 3500 in TETRA standard and 103 MTM 5400 mobile radio terminals in TETRA standard for INP of IGP, DTC, BPDS Fulger of IGP and DP mun. Chisinau of IGP were delivered, programmed and distributed, subsequently were released with completing the documents of receipt-delivery. - Within the same contract, 26 camouflaged portable terminals of model ST7000 were delivered. - The endowment with radio terminals of the employees was made from financial sources / projects: thus, in 2020 they were purchased by IGP of MAI - 370 radio terminals, by IGC of MAI - 180 radio terminals and by IGPF of MAI - 206 radio terminals.
5.	**Establishment and operationalization of the Management Center of the TETRA network**	5.1 Defining the operational model, location and activities	STI								- location identified	400.00	Within the approved budget, other financial sources	**ACCOMPLISHED** The location of the network management center has been identified (object 75)
		5.2 Elaboration of the organizational structure	DMI of MAI STI								- structure approved			**ACCOMPLISHED** The structure of the Information Technologies Service was approved by GD no. 317 of 03.06.2020 with regard to the organization and functioning of the Information Technology Service in which the Communications and Infrastructure Directorate of the General Directorate of Information Technology and Communications was created, which by TSI Order no. 47 of 15.10.2020 ensures the management and admission of the operation of the radio communications system in TETRA standard.
		5.3 Ensuring technical and working conditions	STI								- work space equipped			**ACCOMPLISHED** In the TETRA dispatcher were installed: Dispatcher Console, NMT Console (Network Management Terminal), AVL Gina Console, DL Console (Discrete Listning), Replay Station Console and a Video Wall for its functioning.
		5.4 Installation, configuration and interconnection of equipment	STI								- integration completed - system functional			**ACCOMPLISHED** All equipment was installed and configured within the IGPF and TETRA Management Center of the TSI. Thus, at the moment all the management of the TETRA network can be done from these two locations.

No	Name	Name of subaction	Responsible subdivision	Implementation terms							Result indicators	Accounts (thousand MDL)	Source of funding	Achievements
				2017	2018		2019		2020					
				Sem II	Sem I	SemII	Sem I	Sem II	Sem I	Sem II				
1	2	3	4	5							6	7	8	9
6.	**Elaboration of the institutional normative framework of the TETRA network**	6.1 Defining the operational model (tasks, form of organization, functions) for the responsible structures	STI DMI a **MAI**								- operational model defined			**REALIZAT** La data de 21 Decembrie 2017 a fost recepționat Docuinentul de analizli și ajustare a Studiului de fezabilitate m. MD-17000 1 -RF. Analiza rețelei tetra existente a avut loc la data de 06.03.2018 finisată eli raportul de evaluare nr. MD-MOI-1800004GD din 29.03.20 18 Confonri eontractului nr. 273AP din 06.12.2017
		6.2 Elaboration and approval of the Regulation for the operation of the TETRA network	STI DMI a MAI								- regulation approved			
		6.3 Elaboration of instructions for using the terminals (mode of operation, operating instructions, instructions in case of loss, damage, etc.)	STI								- instructions approved			
											TOTAL:	**247 800,00**		

* Based on the delivery schedule and the operational needs of the police, the priority development areas will be established.