



Monitoring Services for the Tel Aviv Mass transit Network

Annual Report

January 2017 - December 2017

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1. INTRODUCTION

This annual report incorporates the work that has been made by the EMC team during 2017. The report is arranged by the following disciplines: Civil Engineering, Systems, O&M, Budget, schedule, QA/QE and Invoices monitoring.

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2. EXECUTIVE SUMMARY

EMC workplan in 2017 has focused on reviewing NTA's work progress in accordance with its work plan. 2017 was supposed to be a key milestone in the project especially regarding the progress of the civil works (construction) and procurement (tender awarded). The schedule (Rev 10.6) attached to 2017 NTA work plan showed several major milestones on critical paths of the project which were expected to be completed by the end of 2017 accordingly, the EMC has employed its professional team (as detailed in the table below) the monitoring of the activities as required including special reports such as: examination of the change to "TBM 1st", re-tender of the systems and ST&C and re-tender of the O&M.

The report below details the EMC tasks in 2017, including re-review of tenders and review of major engineering changes caused by changes in project implementation.

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3. ANNUAL SUMMARY

3.1 Tenders

The EMC team continues working with NTA on reviewing the various tenders before their publication. The following is detailing EMC work and tender's status during 2017:

SDAG (SYSTEMS) tender

The SDAG tender was considered as a crucial element in the Red Line (RL) Procurement strategy. It framed the core railway systems for the entire RL with Depot development and the Civil Works of At Grade sections. As such, it had a key role in interface management and final integration of the RL elements before testing and commissioning (T&C) and the official issue of the permit to operate (PTO).



NTA proposed to split the SDAG package into "infra 1" package divided to several different sections and "infra 2".

Infra 1 included Civil Works that can be made by Israeli contractors. Infra 2 to was split into three packages: Electrification & Tracks, Signaling and Communication. All the integration between these contractors and the interface management will be done by the PMC. Following NTA suggestion, EMC published in 2/2017 report on **Alternative Tendering Strategy for SDAG**; recommending:

keeping the SDAG similar to the original tender with possibly splitting between CW and Systems. It was not recommended to split the systems into several tenders. EMC however, agreed to an exception, of creating a separate package for S&TC (Signaling & Train Control: interlocking, ATO, ATP, ATS); for two reasons:

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The urgency of the S&TC/ RS interfaces required for the RS design, and the fact that S&TC interfaces while sensitive from the point of view of safety, are simple to manage. The issue was brought before the Minister of Transportation (MOT), which supported the position of EMC. Accordingly, the decision was to allow local contractors under NTA general management to perform infra1, and to publish the tenders for infra2, where the systems contractor will be the project integrator. It was accepted to publish the tender for the selection of a S&TC systems contractor as early as possible.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In December two bids were submitted. [REDACTED]

[REDACTED]

[REDACTED]

The proposals matched the cost estimate.

Signaling systems contractor

The S&TC tender scope includes design, development, supply, installation, testing, and commissioning of Control Systems for the full project, necessary for the safe, reliable, efficient and attractive operation of the Tel Aviv Light Rail Red Line including:

1. Signaling and Train Control System (S&TC)
2. Railway Scheduling System (RSS)
3. Platform Edge Screens (PES) and Platform Edge Gates (PEG)

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4. In addition, the tender includes the design of the systems inputs for the Control Centers

The scope of the tender encompasses all of the Red Line – Rolling Stock, the At-Grade alignment, the Stops, the tunnels, the launching shafts, the Portals, the Stations and the Depot.

TA sent the EMC partial of the S&TC Tender documents to review in 19.3.17 and in 3.4.17.

The rest of the documents and updated documents were sent to EMC during the month of April until the beginning of May. Meetings were held with NTA and the TRR report

8162_ERA_RED_TPO_TRP_120325_A_Signaling_and_Train_Control_Tender_Readiness was published in 15.5.17 with RFT. The main issues where as follows:

1. The budget for this contract is unclear. NTA did provide a draft of BOQ for the Project, to make an estimation.
2. NTA did not clarify the relationship between the STC as nominated sub-contractor to the main system contractor. Noted that GOI confirm to publish the tender without an update budget. In addition, GOI concluded that the gap between the budgets will be covered from the contingency.

[REDACTED]

Turkish alignment

EMC updated the TRR **8162_ERA_RED_TRO_120302_B** which was published in 29.12.16 [REDACTED]

[REDACTED] and published a new TRR [REDACTED]


8162_ERA_RED_TRO_120302_C with RFT in 3.1.17. After publishing the TRR some issues have been raised and discussed about the budget estimation. EMC implemented the conclusions and published a new TRR **8162_ERA_RED_TRO_120302_D** with RFT in 29.1.17 with current Estimation regarding the split between the TBM west package and the TA and Update Appendixes A+B with an

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update status. According to that, GOI approved the Tender and the Tender was published and In May NTA published that the winning contractor was Minrav.

INNER BOX

A new tender for the construction of the Inner boxes was published by NTA in 18/8/2017 [REDACTED]

[REDACTED] The tender was published to choose  alternative contractors to complete the inner boxes instead of the current TBM joint ventures.

RS

In the mockup site visit together with NTA's representatives, EMC was told that the mix of the wagons that were signed with the RS contractor had been changed from 32 double wagons and 58 single wagons to 90 single wagons. [REDACTED]

O&M tender

NTA decided to publish the O&M tender for the selection of the operator of the Red Line, to involve him in the planning and structuring processes of the project.

The scope of services of the O&M Contractor covers mainly:

- Pre-operational services
- Provision of scheduled passenger services Fare collection and revenue protection
- Maintenance of all infrastructure and all LRT facilities, and of all the equipment and sub-systems which won't be maintained by other Maintenance Contractors.

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- Management and supervision of the maintenance activities undertaken by the Rolling Stock Maintenance Contractor
- Management and supervision of the maintenance activities undertaken by the Systems Contractor
- Asset management and inspection (all Red Line assets)
- Cooperation and support to the Security Contractor.

During the discussions of the changes in the procurement strategy of the project (the systems tender, the Fit-out tender, and the mitigation plan), EMC issued its recommendation in a report that was published on March 6th -

8162_ERA_RED_OPE_TRP_120318_A_O&M_Tender_EM_C_Recommendations to postpone the deadline for submitting the O&M tender. [REDACTED]

[REDACTED]

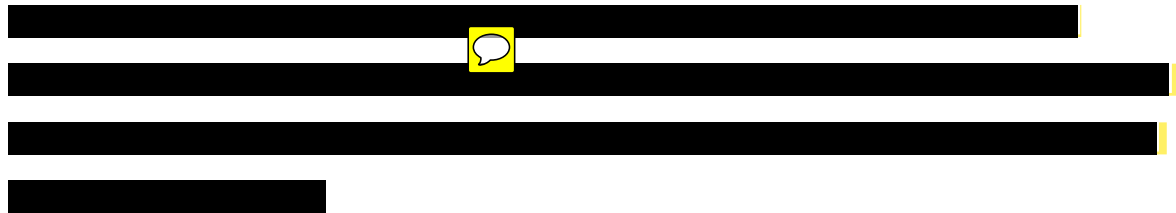
[REDACTED] In August NTA published that the winning consortium was "TEVEL" (Egged, CCECC and Shenzen)

Fit Out Tender

Beginning of January NTA scheduled a meeting to present EMC representatives the new procurement strategy for the Fit-out Tender and its schedule. The main point in the new procurement strategy is to split the Tender to 5 different Tenders. The integration and interfaces will be managed by NTA&PMC. In May, NTA changed the Fit-Out strategy to split the Tender into 4 packages:

TVS+ HVAC, Elevators + Escalators, finishing materials, finishing works to be performed by 4 different contractors. Following that, the EMC reviewed the new procurement strategy and a meeting was held with NTA and PB (nir partzelina). EMC published a special report **8162_ERA_RED_CMN_TRP_120331_A_ לביצוע עבודות הגמר בתחנות אסטרטגיית הרכש** in 4.6.17.

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EMC Sent a draft of the project report for the FO package:

8162_ERA_RED_FOT_TRP_120317_A- פרויקטאלי פיטאאט דוח to GOI on 27.11.17

Elevators and escalators tender

EMC has submitted RFP document. The main conclusions:

1.  EMC cannot evaluate this budget until a comprehensive estimate of the FO package is received.
2. The schedule for the execution of the elevator works must be updated until an updated project timetable 10/8 is received.

Purple Line

The GOI steering committee have decided that Green and Purple lines PMC and design Tenders will not be reviewed by EMC although in March a preliminary project report

8162_ERA_GRE_TPO_TRP_120317_A - דוח פרויקטאלי קו ירוק וסגול was made.

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3.2 SITE VISITS

This year EMC held several site visits in the project's works site with the aim of monitoring the progress of the works compared to the accounts and schedule.

Month	Herzel	Alle	Carli	Yehudit	S.H	Arlo	A.H	Bial	B.G	Ahar	Em.H - 5/8	Dep	TBM
Jan		✓	✓	✓	✓								
Feb						✓	✓	✓					✓
Mer						✓			✓	✓	✓	✓	✓
Apr							✓	✓					
May			✓	✓	✓				✓	✓	✓		
Jun	✓	✓											
Jul						✓	✓	✓					
Aug			✓						✓	✓	✓	✓	✓
Sep				✓	✓	✓							✓
Oct									✓	✓	✓		✓
Nov	✓	✓		✓	✓							✓ ⁺ RS	
Dec		✓	✓				✓	✓				✓	

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3.3 Schedule

At the end of March, NTA published a new 10.7 schedule which was given to EMC for review. This schedule reflects several changes, such as TBM 1st, SDAG Tender cancelations and construction delays. A meeting was held in April and clarified questions sent to NTA comments in 19.4.17. NTA responded with comments and based on that a draft report 8162_ERA_RED_CMN_TRP_120322_A_10.7_Master_Schedule_Report was sent to NTA for review on May. NTA commented to the report received on 22.5.17 and a new draft report 8162_ERA_RED_CMN_TRP_120322_B_10.7_Master_Schedule_Report was sent to NTA for further review on Jun. NTA commented to the second report received on 21.6.17 and EMC sent the final report 8162_ERA_RED_CMN_TRP_120322_C_10.7_Master_Schedule_Report to GOI on Jul.



3.4 Budget

During the year of 2017 EMC had reviewed the budgets of the "Red Line" project. In accordance with the conclusions made from the review, that there is no significant risk to the project's budget, leading to a decrease in the risks of failure of deviation from the project's budgets.

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The main changes in the project budget are as follows:

As a result of the change in the procurement strategy of the systems tender - approximately 200 M NIS.

At the same time, EMC began to conduct a risk survey, which maps the risks of construction in the project. The conclusions will be reported in 2018.

EMC ADVISED Government's representatives that an approved operating budget for operating the red line had not yet been presented yet.

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3.5 QA/QC

- During the year NTA proceeded with its QMS by employing QA management company – D'applonia S.p.A to be responsible for:
 - Auditing and surveying all actions of Design & Construction,
 - Auditing procurement actions (Tenders)
 - Complete structuring NTA's QMS (Procedures).

 - As part of the process with NTA, the EMC team has ongoing activities that include:
 - Construction QC/QA by the contractor and the PMC (PB + Locals) review,
 - Design and tenders estimates audits review,
 - And Quantities take off.
- RS design and plant reviews
- The major issue regarding QA activities is the ongoing lack of QC personnel that should have been enforced vigorously.

3.6 Invoice Monitoring

Continued examination of the various NTA project invoices, and an emphasis on making the correct invoicing procedures.

This year NTA transferred over 4,830 accounts of about 1,880M NIS for monitoring.

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Until February 2017, NTA transferred to the EMC a hard copy of the invoices in binders. As of March 2017, copies of the invoices were sent to the EMC in digital form of CD's. Transferring the material in a digital format is faster and easier and enables retrieval of any desired invoice in a fast manner. The EMC transfers the contents of the disks to the server and thus invoices are stored all months in one database which is also backed up (except the disks) automatically. In addition, the work with PDF files enables various markings on the invoice, while working, which are also saved.

This Year invoices tracking raised several issues such as:

- [Redacted text block with a yellow speech bubble icon]
- [Redacted text block]
- [Redacted text block]
- [Redacted text block]
- [Redacted text block]
- [Redacted text block]
- [Redacted text block]

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4. MAIN ANNUAL ACTIVITIS

4.1 Reports Published in the Year

Date	title	Chrono number
3.1.17	Turkish alignment RFT	8162_ERA_RED_CWT_TRP_120302_C_Turkish alignment RFT
29.1.17	Turkish alignment RFT	8162_ERA_RED_CWT_TRP_120302_D_Turkish alignment RFT
22.01.17	Response for MOF letter	8162_ERA_COM_CMN_LTR_120310_Response_For_MOF_Letter
21.02.17	TBM First Option Assessment	8162_ERA_RED_CWT_TRP_120313_TBM_Firs_Option_Assessment
21.02.17	SDAG Alternatives	8162_ERA_RED_CWT_TRP_120314_SDAG_Alternatives
26.02.17	Annual Report 2016	8162_ERA_RED_CMN_YRP_120315_Annual_Report_2016
1.03.17	EMC Monthly report Dec 2016	8162_ERA_RED_CMN_MRP_120274_A - Dec 2016
2.03.17	דוח פרויקטאלי קו ירוק וסגול	8162_ERA_GRE_TPO_TRP_120317_A - דוח פרויקטאלי קו ירוק וסגול
6.3.17	O&M_Tender_EMCo_Recommendations	8162_ERA_RED_OPE_TRP_120318_A_O&M_Tender_EMCo_Recommendations

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13.3.17	דוח הערות לתוכנית עבודה נת"ע 2017	8162_ERA_COM_CMN_TOO_120319_נת 2017
13.3.17	Q42016 Quarterly Report	8162_ERA_COM_CMN_QRP_120320_Q42016 Quarterly Report.docx
9.4.17	EMC Monthly report JAN- FEB 2017	8162_ERA_RED_CMN_MRP_120321_A - JAN-FEB 2017
8.5.17	10.7 Master Schedule Report	8162_ERA_RED_CMN_TRP_120322_A_10.7 Master Schedule Report
16.5.17	תגובת חברת הבקרה לדוח אפקטיביות הבקרה	8162_ERA_COM_CMN_LTR_120323_C - תגובת חברת הבקרה-תג הבקרה לדוח אפקטיביות
14.05.17	Signaling and Train Control Tender Readiness	8162_ERA_RED_TPO_TRP_120325_A_Signaling_and_Trai n_Control_Tender_Readiness
7.5.17	סיכום פגישה בנושא מערך ע"אבטחת האיכות בנת	8162_ERA_COM_TPO_MER_120326_A - MoM – QA
28.5.17	השלמה לדוח מוכנות למכרז התייחסות לאומדן המכרז	8162_ERA_COM_CMN_LTR_120327_A השלמה לדוח לאומדן המכרז מוכנות למכרז התייחסות
28.5.17	בקשה לקבלת מידע עבור תהליך אבטחת האיכות	8162_ERA_COM_CMN_LTR_120328_A בקשה לקבלת מידע תהליך אבטחת האיכות
28.5.17	בקרה תקציבית והזנת נתונים למערכת BI	8162_ERA_RED_TPO_FRP_120329_A_ בקרה תקציבית BI והזנת נתונים למערכת BI
28.5.17	בקרה תקציבית והזנת נתונים למערכת BI	8162_ERA_RED_TPO_FRP_120329_A_ בקרה תקציבית BI והזנת נתונים למערכת BI

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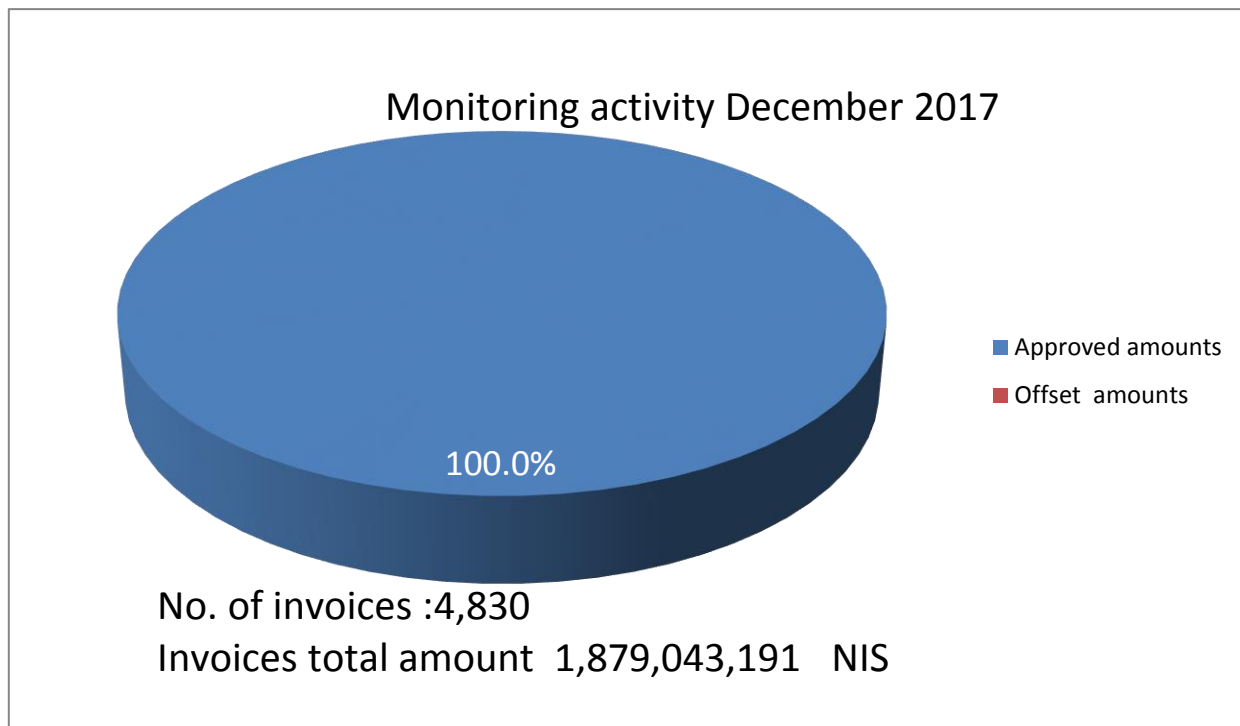
4.6.17	אסטרטגיית הרכש לביצוע עבודות הגמר בתחנות	8162_ERA_RED_CMN_TRP_120331_A_ אסטרטגיית הרכש בתחנות לביצוע עבודות הגמר
9.6.17	EMC Monthly report March 2017	8162_ERA_RED_CMN_MRP_ 120332_A - March 2017
5.7.17	EMC Monthly report Apr- May 2017	8162_ERA_RED_CMN_MRP_ 120333_A - Apr-May 2017
10.7.17	אסטרטגיית מכרז עבודות הגמר_מכתב	8162_ERA_RED_CMN_LRT_120331_A_ אסטרטגיית מכרז עבודות הגמר_מכתב
11.7.17	10.7 Master Schedule Report	8162_ERA_RED_CMN_TRP_120325_C_10.7 Master Schedule Report
31.7.17	System RFT	8162_ERA_RED_SYS_TRR_120336_A_System_Tender_Re adiness
16.8.17	EMC Monthly report June 2017	8162_ERA_RED_CMN_MRP_ 120335_A - June 2017
23.8.17	מכתב התייחסות לפרסום מכרז INNER BOX	8162_ERA_RED_CWS_LTR_120337_A_למכרז_! INNERBOX
16.8.17	EMC Monthly report July 2017	8162_ERA_RED_CMN_MRP_ 120338_A - July 2017
31.7.17	System RFT	8162_ERA_RED_SYS_TRR_120336_A_System_Tender_Re adiness
05.9.17	Q12017 Quarterly Report	8162_ERA_COM_CMN_QRP_120320_Q12017 Quarterly Report.docx

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05.9.17	Q22017 Quarterly Report	8162_ERA_COM_CMN_QRP_120320_Q22017 Quarterly Report.docx
	EMC Monthly Report August 2017	8162_ERA_RED_CMN_MRP_120339_A_August 2017
7.11.17	EMC Monthly Report September 2017	8162_ERA_RED_CMN_MRP_120340_A_September 2017
21.11.17	FITOUT דוח פרויקטאלי	8162_ERA_RED_TPO_TRP_120341_A- דוח פרויקטאלי פיטאאוט-FINAL
19.12.17	EMC Monthly Report October 2017	8162_ERA_RED_CMN_MRP_120342_A_October 2017
1.12.17	ElevatorEscalator_RFT	8162_ERA_RED_TPO_TRR_120343_A_ElevatorEscalator_ RFT
14.11.17	EMC Monthly Report November 2017	8162_ERA_RED_CMN_MRP_120344_A_November 2017

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4.2 Billings Activity



	Invoices (No.)	Invoices (NIS)	Average (No. per month)	Average (NIS per month)
2012	2,174	28,657,784	217	28,657,784
2013	2,121	379,126,965	177	31,593,914
2014	2,752	435,744,866	229	32,484,467
2015	2,693	982,497,795	326	96,510,409
2016	2,689	938,877,072	384	134,125,296
Jan-Dec 2017	4,830	1,879,043,191	384	134,087,870
December 2017	494	127,322,145	494	127,322,145
Total	17,753	4,771,269,817	316	70,563,560

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WORKING MEETINGS

5.1 NTA Meeting

date	subject	
04/01/2017	הצגת מכרז מנהלי פרויקטים קווים ירוק+ סגול	EMC-NTA
11/01/2017	מכרז ה - FIT OUT	EMC-NTA
12/01/2017	Meeting Status	EMC-NTA
15/01/2017	Egis Site Tour	EMC-PMC
18/01/2017	TBM First	EMC-NTA
25/01/2017	TBM First	EMC-NTA
25/01/2017	IBI Contract	EMC-
01/02/2017	התייחסות חברת הבקרה - קווים ירוק+סגול+SDAG	EMC-NTA
01/02/2017	מעקב תקציבי ותזרים/תוכניות עבודה	EMC-NTA
08/02/2017	פלט חשבון ונתונים מצטברים	EMC-NTA
09/02/2017	התייחסות חברת הבקרה - הצגת אסטרטגיב SDAG- חלופית	EMC-NTA
15/02/2017	תשלומים - MTRS	EMC-NTA
22/02/2017	Egis Site Tour	EMC-PMC
28/02/2017	מכרזי מערכות	EMC-NTA

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09/03/2017	Status Meeting	EMC-NTA
09/03/2017	פעילות בנושא אבטחה וחרום עם הבקרה	EMC-NTA
14/03/2017	סטטוס תכנון מרכז בקרה	EMC-NTA
22/03/2017	סטטוס תכנון קו חום - הצגה לEMC	EMC-NTA
23/03/2017	Status Meeting	EMC-NTA
28/03/2017	Egis Site Tour	EMC-PMC
29/03/2017	מכרז מערכות	EMC-NTA
04/04/2017	Presenting 10.7 to Egis	EMC-NTA
06/04/2017	Status Meeting	EMC-NTA
19/04/2017	Signaling Tender	EMC-NTA
20/04/2017	Meeting Status	EMC-NTA
03/05/2017	בקרה על תהליכי בקרת האיכות בנתע	EMC-NTA
04/05/2017	Meeting Status	EMC-NTA
18/05/2017	Status Meeting	EMC-NTA
22/05/2017	הצגת עבודות גמר בתחנות	EMC - Nir Perzlina
22/05/2017	אומדן איתות	EMC-NTA
03/07/2017	שילוב חברת הבקרה ב-ACONEX	EMC-NTA
09/07/2017	ישיבת הכנה לקראת ישיבה אצל יעקב בליטשטיין	EMC-NTA
10/07/2017	מכרז מערכות	EMC-NTA

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11/07/2017	Meeting System Tender Technical	EMC-NTA
18/07/2017	התייחסות להערות חברת הבקרה מכרז מערכות	EMC-NTA
19/07/2017	דוחות בקרת איכות - הגדרת תהליך	EMC-NTA
19/07/2017	אומדן - SDAG	EMC-NTA
06/08/2017	אווה - חוזה דקר	EMC-NTA
09/08/2017	Visit to Galei Gil PB/Egis Site	EMC-PB
10/08/2017	Meeting Status	EMC-NTA
07/09/2017	Meeting Status	EMC-NTA
11/09/2017	Tenders Bidders Conference Systems	EMC-NTA
13/09/2017	Meeting Status	EMC-NTA
03/10/2017	דרגנועים ומעליות מכרז ה- FITOUT	EMC-פרצלינה
25/10/2017	Segment Factory Egis Visit to	EMC-PMC
06/11/2017	הערות חברת הבקרה למכרז מעליות ודרגנועים	EMC-NTA
15/11/2017	Site Visit to TBME Tunnels	EMC-PMC
15/11/2017	Site Visit to Depot Worksite	EMC-PMC
16/11/2017	Status Meeting	EMC-NTA
16/11/2017	Mockup Visit	EMC-NTA
22/11/2017	Site Visit Yehudit, Shaul Hamelech, Allenby + Hertzl	EMC-PMC
30/11/2017	עקרונות התכנון של מיזוג ואיוורור תחנות	EMC-PARZ

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06/12/2017	דו"ח פרויקטאלי מכרזי	EMC-NTA
13/12/2017	Status Meeting	EMC-NTA
28/12/2017	Status Meeting	EMC-NTA

5.2 GOI Meeting

date	subject	
16/01/2017	פגישת בקרה נת"ע	EMC-MOT-NTA
22/01/2017	פגישת בקרה נת"ע	EMC-MOT-NTA
13/02/2017	נת"ע M&O מכרז	EMC-MOF
19/02/2017	ישיבת התנעה - בקרת פרויקטים	NTA-MOT
23/02/2017	פגישת בקרה חודשית נת"ע	EMC-MOT-NTA
08/03/2017	פגישה בקרה חודשית נת"ע	EMC-MOT-NTA
30/03/2017	לוחות זמנים של קו אדום	EMC-MOT-NTA
30/04/2017	דוח אפקטיביות הבקרה	EMC-MOT
04/05/2017	פגישה חודשית נתע	EMC-NTA-MOT
14/05/2017	ועדת הגוי רק"ל תל אביב	EMC-MOT
13/06/2017	פגישת עבודה עם חברת הבקרה	EMC-MOF
28/06/2017	פגישת עבודה עם חברת הבקרה	EMC-MOF
04/07/2017	בקרת לוז נת"ע	EMC-MOF

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04/07/2017	תיאום בקרה נת"ע	EMC-MOT
12/07/2017	פגישת בקרה חודשית נת"ע	EMC-MOT
23/07/2017	ועדת הגוי רק"ל ת"א	EMC-MOT
04/09/2017	תיאום בקרה נת"ע	EMC-MOT-NTA
06/09/2017	אצל ישי - תגובת מבוקר לדוח נת"ע עם חברת הבקרה	EMC-MOF
13/09/2017	פגישת בקרה חודשית נת"ע	EMC-MOT-NTA
03/10/2017	מחקר אומדני הפרוייקטים בניית מכרזים	EMC-MOT
04/10/2017	תאום בקרת נת"ע	EMC-MOT
26/10/2017	נת"י-תומר גודוביץ-אליאס מטר	EMC-MOF-NTA
28/11/2017	פגישה חודשית נתע	EMC-NTA-MOT
11/12/2017	ע"חברת נת 2018-2022 תוכנית עבודה	EMC-MOT-NTA
18/12/2017	א - קרנות קו אדום"ת ל"רק	EMC-MOT
24/12/2017	ע"טכנולוגיות נת סטטוס	EMC-MOT-NTA

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5.3 Expert Days

EMC Annual Mobilization 2017		
Name	Title	Days
COMPERAT Bruno	PM Acting	26
Thomas Grammenos	CW & Tunnels expert	133
Denis Colrat	System Expert	21
Olivier Bouvart	CEO Egis Rail	3
Philippe Amat	Regional Director	3
Jachiet Nicolas	CEO Egis	3
Yves Amsellem	Signaling Expert	2
Expert Days		191

5. EMC CONTRACT UPDATE AND EXTENSION

During the year, EMC made changes to its organization:

1. Bruno Comperat was replaced by Dr. Tomer Goodovitch as PM
2. UG consultant Eng. Andrew Bourget was replaced by Thomas Grammenos

In August 2017 Egis received a contract extension for one more year.