|  |
| --- |
| IOH Spesific MOP  附件1-16K |
| |  |  |  |  | | --- | --- | --- | --- | | **Prepared by:** | **Aktortifan Ridno Prabu Pratama (AWX1014609)** | **Date:** | **«predate»** | | **Reviewer:** | **Aris (AWX544314)** | **Date:** | **«predate»** | | **Approver:** | **Goh Kok King**  **(G00493149)** | **Date:** | **«predate»** | |

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# Description of Change

## Description of Site

**Network Topology:**

|  |  |
| --- | --- |
| **NCE Network topology diagram** |  |
| **Key features and business** | Microwave Link Upgrade Capacity  Features : Microwave Link Configuration Bandwidth Capacity |

**Remote access information: customer agree remote access. The authorization will provided at operation date.**  **Remote Access via VPN**



## Purpose and Requirements

|  |  |
| --- | --- |
| **Change purpose\*** | MW Upgrade Link for o increase capacity and solve congestion issue |
| **Change scope\*** | MW Upgrade **«linknum»** link(s) under **«region»** area |
| **Change time\*** | **«date»** To **«date»**, **«time»** (All day from 00:00 – 23:59, follow customer approval CR) |

## Description of Change and Change Influence

NE version update information

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NO. | NE ID | NE TYPE | QTY | Current Version | Target Version |
| 1 | NCE (10.70.17.147) | NCE-T | 1 | V100R019C00SPC630 | V100R019C00SPC630 |



Service influence

|  |  |  |  |
| --- | --- | --- | --- |
| **DUID** | **Qty** | **Dependency List** | **Data Source** |
| «duid» | «qty» | «list» | «source» |

# Preparations for Change

## Composition of Change Team and Responsibility of Team Members

### Change Team of Huawei Company（Customer）

|  |  |  |
| --- | --- | --- |
| **Name** | **Responsibility** | **Telephone No.** |
| Rian Ikbal | H3I Planning | 089618888805 |
| Argidinata | H3I Operation | 08992393335 |
| Ernest | H3I TBM JABO1 | 08982293334 |
| Bayu Rendro | H3I TBM JABO3 | 08999333364 |
| Widi | H3I TBM JABO2 | 089688100017 |

### Huawei On-site Change Team

|  |  |  |
| --- | --- | --- |
| **Name** | **Responsibility** | **Telephone No.** |
| Goh Kok King (g00493149) | Owner for change | +62 897-3607-326 |
| Aris Budiyanto(awx544314) | Team member | +62 8990098546 |
| Deden 00738162 | Team member | +62-8121064874 |
| Ajia Leonardo (a00598938) | Owner for change | +62 813-6217-4917 |
| Samuel Teguh (WX281796) | Team Member | +62 895-3035-7149 |
| Imar Prasetiono (i00262076) | Team Member | +62 896-3002-1008 |
| Arwan Rianto WX912663 | Team Member | +6281212670311 |
| Miki Priyanto WX684662 | Team Member | +6282177587757 |
| Saeful Fadli WX813785 | Team Member | +6289635328746 |
| Pahruroji WX903309 | Team Member | +6287773101536 |
| Novel Akbar WX819421 | Team Member | +6289637356535 |
| Amran Rosadi WX826183 | Team Member | +628983906128 |
| Abdul Rosyid WX684665 | Team Member | +6281216960391 |
| Nizar Muchtar WX684664 | Team Member | +62817818414 |
| Berto Pasaribu WX922005 | Team Member | +6282150274902 |
| Suherman WX999953 | Team Member | +6281214451181 |
| Sigit Wibowo WX903307 | Team Member | +62817293888 |

### Huawei Remote support Team (Optional)

|  |  |  |
| --- | --- | --- |
| Name | Responsibility | Telephone No. |
| Zhangling z00380621 | Escalation from microwave side | 081219748518 |
| Cheiw Cheong Loon c00742069 | Team member | +6281314862000 |

## Remote Access + Platform & Software Access

|  |  |  |
| --- | --- | --- |
| **Item** | **Preparation status** | **Owner** |
| NCE-T | Prepare 2 remote access solutions to customer network  Main solution 1: VPN using Fixed Broadband  Backup solution 2: VPN using Mobile Broadband  Internet network info & ping test results: | Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 |

## Check of Equipment Running

| No. | Check Item | Check result or steps |
| --- | --- | --- |
| 1 | alarm | Query and monitor by using NCE server MML Command “browse current alarm”. Check result : **No alarm** |
| 2 | Radio Link Performance (ES, SES & UAS) | Query performance link analysis and coordination with regional Network Performance Management team. Check result : **No Issue** |
| 3 | hardware operation status | Query and monitor by using NCE server. Check result : **Board No alarm** |

## Change Risks and Countermeasures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Main Issues and Risks Description** | **Countermeasure** | **Possibility** | **Impact** |
| 1 | Service Interruption | if the service interrupted more than 1 hour , we have on-site support | Medium | Low |
| 2 | Data Lost | Data already backed-up in server NCE | Low | Low |
| 3 | NE out of management | Subcon onsite do troubleshooting using WebLCT. | Low | Low |

## Check before Change

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Preparations Before Change** | **Owner** | **Completion Date** |
| 1 | Readiness of Operation team(including no limit: customer/change team/relate vendor team/monitoring team/verification team) | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 2 | Readiness of Implementation Solution (Including no limit: activity solution/verify solution/rollback solution) | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 3 | Readiness of Solution verify in test bed(For High Risk Implementation solution) | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 4 | Readiness of Solution Review | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 5 | Readiness of remote log-in environment | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 6 | Readiness of Site Enter Permit(If relate) | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 7 | Explain MOP to customer | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | NA |
| 8 | Get 3 approval of RFC | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 9 | Confirm test solution with customer | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before activity |
| 10 | Send email notification of operation to customer | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 3 hours before Activity |
| 11 | Get operation user account permission from customer | Deden 00738162  Aris WX544314  Samuel Teguh S WX281796  Goh Kok King g00493149  Ajia Leonardo a00598938  Imar Prasetiono 00262076 | 1 day before Activity |

If no, input **NA** here

# Operation Steps for Change

## Overall Description of Change Steps

|  |  |  |
| --- | --- | --- |
| **No.** | **Main steps** | **Operation time** |
| 1 | Preparation | 12:00 – 13:00 (subject to CR) |
| 2 | Operation | 13:00 – 15:00 (subject to CR) |
| 3 | Verification | 15:00 – 16:00 (subject to CR) |
| 4 | Rollback | 16:00 – 17:00 (subject to CR) |
| 5 | Complete | 17:00 (subject to CR) |

## Operation Steps for Change

I. Preparation Steps

1. Check the alarm before the execution
2. Coordinates with NOC & TOC before starting to execute

II. Implementation Steps.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Change Step** | **Operation** | **Implementation Person** | **Time** |
| 1 | Backup NE database | Backup NE database and capture existing configuration on NCE | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 12:00 – 13:00  (subject to CR) |
| 2 | Hardware  Installation (Depend on Scenario) | MW Upgrade :   * + Install the additional New ODU & New Antenna   + Swap antenna ODU & Antenna   + Add/swap the coupler from 6dB to 3dB   + Install the additional New IDU   + Swap the IDU   + Insert new/replace the IF board and Eth board   + Add new connection/cascade IDU (reengineering) | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 13:00 – 14:00  (subject to CR) |
| 3 | Configuration | MW Upgrade :   * Set up NE Attribute (for new IDU/change control board) * Set Link/Cascading fiber * Set up the microwave link configuration, put all the parameter following the link budget for the new additional channel or new modulation capacity * Scan the frequency to identify the interferences * Set up the VLAN on E-LAN configuration * Check the traffic utilization, do the rebalance if needed | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 14:00 – 14:30 (subject to CR) |

## Test and Verification

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Test Item** | **Operation Method** | **Owner** | **Time** |
| 1 | service test | Check actual microwave rate/ throughput link | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 14:30-14:45 (subject to CR) |
| 2 | Alarm compare | Check the alarm before and after Change configuration (Note: When finish upgrade check 2G/3G/4G node availability status) | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 14:45-15:00 (subject to CR) |
| 3 | Check Performance | Check Link performance (ES; SES and UAS) | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 15:00-15:30 (subject to CR) |

## Solution for Changeback In the Case of Failure

### Definition of Change Failure

| **Change back time** | 16:00 – 17:00 (subject to CR) |
| --- | --- |
| **Change back decision maker** | **Huawei: TD** Zhangling (z00380621) 081219748518  **Customer:** Ernest +62 8982293334  **Customer:** Bayu Rendro +62 8999333364  **Customer:** Widi +62 89688100017 |
| Rollback condition | 1. Link down.  2. RSL is low.  3. Service not normal.  4. Link have interference. |

### Changeback Steps

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Change back Steps** | **Operation content** | **Owner** | **Time** |
| 1 | Rollback the hardware | Re-install the existing equipment :  For microwave link, need to install back the existing IDU, ODU, Antenna, IF cables and power cables as previously.  For Ethernet interface, reinstall the eth board existing, change back the connection as previous condition | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 16:00 – 16:45 (subject to CR) |
| 2 | Rollback the configuration | Reconfigure all the parameter as same as before execution :   1. Reconfiguration MW link configuration 2. Reconfigure Ethernet interface parameter 3. Reconfigure ELAN service 4. Reconfigure E1 (SDH/PDH) service 5. Reconfigure Aggregation service (PLA/EPLA) | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 16:45 – 17:00 (subject to CR) |

### Change back flow (optional)

NA

### Equipment Status Check (optional)

NA

### Tests after Changeback

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Test Item** | **Operation Method** | **Owner** | **Time** |
| 1 | Service test | Check the NE's service :  Microwave Link Interface, check the traffic  E-LAN service -> advance attribute, check the service, and check the self-learn mac address  Microwave Link Performance : check the parameter of RSL, ES, SES & UAS | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953Berto Mando Pasaribu WX922005  Suherman WX999953 | 17:00-17:30 (subject to CR) |
| 2 | Alarm | Check the NE clear from alarms or same as before execution | Deden 00738162  Aris WX544314  Samuel Teguh (WX281796)  Sigit Wibowo WX903307  Arwan Rianto WX912663  Miki Priyanto WX684662  Saeful Fadli WX813785  Pahruroji WX903309  Dedi Kusuma WX684663  Novel Akbar WX819421  Amran Rosadi WX826183  Abdul Rosyid WX684665  Nizar Muchtar WX684664  Berto Mando Pasaribu WX922005  Suherman WX999953 | 17:30-18:00 (subject to CR) |

### Changeback Risk Analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Main Issues and Risks Description** | **Possibility** | **Impact** | **Countermeasure** |
| 1 | Rollback Failed | Low | Low | If cannot solve problem, contact with GTAC hotline |
| 2 | After rollback, the NE still loss management | Low | Low | Create a new DCN link for this NE.  Go to site to recover the DCN port |
| 3 | BTS service down | Middle | Low | Create the TT to MS to get on site support |

## Change of Spare Parts and Emergency Workstation (optional)

N/A

# Work after Change

## Observation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Observation Item | Observation method | Owner | Observation Time |
| 1. | Alarm | Check current alarm status, make sure alarm clear (or same condition with before)` | RO+MS | 18:00 – 23:00 (subject to CR) |
| 2. | Query Radio Link Ethernet Bandwidth Utilization Report | Check whether configuration not match with link budget, Web LCT/U2000 – Microwave Interface | RO+MS) | 18:00 – 23:00 (subject to CR) |
| 3. | Radio Link Performance (ES, SES & UAS) | Check the radio link performance, send out the report and then coordination to Regional NPM team to monitor and share the performance result from their side | RO+MS | 18:00 – 23:00 (subject to CR) |

## Provision of Materials (optional)

NA

## Provision of Software (optional)

NA

## Training (Optional)

NA

## Matters Needing Attention (Optional)

NA