

Centre for Railway Information Systems
ITPI Building 3rd Floor, 4 - A, Ring Road,
I P Estate, New Delhi - 110002.

No. 2006/CRIS/NDLS-HQ/CMS/Project//BA-Bio/0031/Pt.I

Date 01 Mar, 2016.

To
As per List

Sub: Minutes of Meeting for review of CMS client image with BA BIO functionality held at CRIS ITPI office, on 19-02-2016.

Attended by: As per list

1. Railway Board had desired to integrate Biometric identification and Breath Analysis with CMS application.
2. In this connection trials were started at 5 lobbies (TKD, DLI, SSB, UMB, MB) of NR.
3. New CMS TSS (terminal support system, i.e. KIOSK complete with thin client BA and BIO devices, Stand-alone thin clients, UPS etc.) equipment were commissioned at these lobbies for trials in Dec 2012.
4. Observation during trials were communicated to CAO office vide this office letter no 2006/CRIS/NDLS-HQ/CMS/Project//BA-Bio/0031/Pt.I dated May 31 2013. It was concluded that in the absence of rugged BA devices trials shall be continued. The warranty period of the supplied equipment expired on June 2015 even after extension by 6 months.
5. Subsequently development was continued on further refinement of client application and BA device. Based on the development new client image ver 3.0 was developed inhouse along with development of BA devices. Few BA devices incorporating latest modification were procured by CRIS. These were deployed along with new client image ver 3.0 for further trials.
6. The image and CMS application was further refined based on the field experience and additional requirement of integrating Camera to click image of the crew undertaking BA test. The latest image based on user experience and feedback (version 3.1) was used for demonstration.
7. **Salient features of new client image and CMS application along with new BA devices are enclosed as annexure A.**
8. Mounting arrangement of BA device was also improved over time with following features.
 - Modular Mounting arrangement: It was observed that with new device mounting arrangement in the KIOSK was required to be modified. A modular design was developed so as to ensure that device can be changed as part of standard module. KIOSK has the provision for standard module.
 - Contact less blow arrangement: Earlier blow pipe was directly connected to the device . This resulted in accumulation of sputum during blow and was also prone to damage to device mechanically as well as through alcohol/water. In the present design a two piece metal pipe is used. Outer piece is projecting outside the BA module. Inner piece is aimed at BA device with air gap between device and pipe. This avoids direct access to device and also helps in accumulation and disposal of sputum/liquid through a funnel positioned at the air gap.
 - Mouth piece: Earlier devices required dedicated mouth piece for blowing of air. This was found difficult to maintain and was easily lost. The outer piece metal pipe has now been designed to allow blowing of air through common straw used for drinking beverages. In emergency air can be blown using hand around the metal pipe.

- This modified modular design has been provided at 4 lobbies (TKD, DLI, SSB, UMB) where trials for Bio and BA are being carried out
- Demonstration was considered successful for large scale implementation of BA BIO functionality.
 - Provision has been kept in CMS for repeating the BA test in case of BA Fail. Lobby can be configured from CRIS for no of BA test required to declare a person BA FAIL. (Values can be 1 or 2 only). If lobby is configured for 2 BA test, then for BA Fail in first test, second test will be initiated and a person will be declared BA FAIL only after confirmation of the same in 2nd test. However this feature shall be implemented only after approval of the same by Railway Board. Till such time it should be kept as 1 only.
 - Presently value above 0mg/100 ml is considered as BA fail. It has been observed that BA test result immediately after consuming cough syrups etc. are in the range of 100mg/100ml. This comes down significantly in around 5 to 10 minutes. Railway Board may also examine if limit for BA FAIL needs to be modified.
 - Client needs minimum of 4 GB ROM and intel or compatible processor for Client image ver 3.1 to run. For clients with right processor but less ROM, facility has been developed in image itself to boot the client with pen drive.
 - Though functionally the new image and new BA device are found working satisfactorily, the scheme of using pen drive as ROM is not very reliable and prone to corruption resulting in erratic behavior of thin client. To verify this a thin client with higher internal ROM was tried. This problem is not experienced if ROM internal to thin client is used. Lot of effort and energy is being wasted for resolving the issues arising out of use of external pen drive as ROM. Increase in RAM with new thin client will also result in smoother performance. It may be noted that bulk procurement against sanctioned work is also being done with thin clients with higher RAM and ROM.
 - With new thin clients with higher RAM and ROM it would also be possible to resolve the issues if any or upgrade a feature from CRIS itself without the need of physically reloading the image at site for most of the time.
 - The clients provided at these lobbies are more than 3 year old are not suitable for further trial for the reasons stated above. At some lobbies biometric devices too have been damaged beyond economical repairs.
 - CRIS has initiated the procurement of new thin client with higher ROM and RAM and also few new biometric devices to continue and conclude the trials successfully.
 - The status of provisions of BA Bio and Camera functionality in various sanctioned works is as under.

Name of work	No of lobbies covered	Bio	BA	Camera	Remarks
Crew Management System, PB 2005-06 item no. 32 (75)	CMS Pilot + 296 lobbies	Yes	No	No	Old thin client which are now more than 6 years old are not compatible with new CMS client image. Old Kiosk do not have provision for mounting of Bio, BA and camera devices. For providing the BA, Bio and Camera functionality to existing lobbies following would be required

					<ul style="list-style-type: none"> • New Thin client to latest specification (With 8 GB ROM and 4 GB RAM) • New KIOSK suitable for mounting of BA, Bio, Camera devices <p style="text-align: center;">Or</p> <p style="text-align: center;">Additional external mounting arrangement structures on existing KIOSK</p> <ul style="list-style-type: none"> • Procure CMS compatible Bio, BA, Camera devices
Crew Management System final phase stage I , PB 2011-12 item no. 150	220 lobbies	Yes	Yes	No	Under procurement, with provision for all the features Procure CMS compatible, Camera devices
Crew Management System (Final phase stage II, PB 2013-14 item no. 164/2013 - 14 of NR	74 lobbies, 67 Training Centre, 68 Div. HQ, 16 Zonal HQ	Yes	No	No	Under procurement, with provision for all the features Procure CMS compatible BA, Camera devices

13. Railway Board will review and issue policy instructions for provision of Bio, BA and camera integrated to CMS for
- 13.1. Existing CMS lobbies as part of replacement.
- 13.2. Future procurement by the Railways.


 01-03-2016
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 GM / CMS

Attended by

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Mailing List

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3. ED/C&IS, Railway Board, Room no 461, Rail Bhavan, Raisina Road, New Delhi,
4. EDME (Tr), Railway Board, Room No 323, Rail Bhavan, Raisina Road, New Delhi, for kind information.
5. Director Safety 3, Railway Board, Room no 362, Rail Bhavan, Raisina Road, New Delhi,
6. CRSE/FR/NR, Northern Railway, Baroda House, New Delhi- 110001
7. M/s Tayal Tech, 2ND FLOOR, TAYAL TECHNOLOGY HUB, NEAR DEENDAYAL PARK, VYAPAR VIHAR, BILASPUR (CHATISGARH), PIN 495001.

Salient Features of CMS image and application for BA and BIO devices integration**CMS client image ver 3.1**

1. Bulk registration of finger print - Additional function has been provided where finger prints can be registered in bulk even in OFFLINE mode. However if fingerprint is already available on client or central server database, registration of same will not be allowed through this function. It will require reregistration through Supervisor KIOSK function only.
2. Client image has been tested with different technologies for CMS access a) TOMCAT Server b) Webview (particularly for using android devices as client) After trials TOMCAT is being used at present.
3. The finger print image is initially stored at Client and is synced to CMS database as the client is connected to server.
4. Finger print image for any crew who tries to log in is searched on Client database then on Server database. In case image is available on server database same is loaded to client database. Registration is initiated if image is not available on Client as well as server database. On registration both database are updated
5. At initial loading of image user can select the BA and BIO device installed at his lobby (provided device is already integrated into the image). User can also configure the time out interval for BIO and BA after which flow will be taken further.
6. Client needs minimum of 4 GB ROM and intel or compatible processor for Client image ver 3 to run. For clients with right processor but less ROM facility has been developed in image itself to boot the client with pen drive.
7. Client can detect if BA or BIO device has been connected to client.
8. User can enable or disable BA and BIO device in the image
9. Supervisor KIOSK Functions: Additional functions have been provided for supervisor on KIOSK
 - 9.1. BA device test - Supervisor can test the BA device for functioning
 - 9.2. Reregistration of finger print - This will rewrite on the old finger print image.
10. Following BIO devices are integrated
 - 10.1. SECUGEN HSDU03P
 - 10.2. SECUGEN HU 20
 - 10.3. NETGEN HFDU06
11. Following BA devices have been integrated
 - 11.1. TAYAL TECH KATS
 - 11.2. MISCOS KY8000 (does not support device turn ON command from system, function)
12. Client image can be configured to be used for Thin Client or KIOSK on a single click.
13. LED functionality at kiosk (Only with latest CMS image)
 - 13.1. BA ,BIO devices are connected or not can be monitored with this lights.
 - 13.2. Green light means device is connected and enabled. Red light means it is disconnected and disabled.
 - 13.3. Yellow light means some error is there.
14. Flow of KIOSK login has been changed.

To letter no 2006/CRIS/NDLS-HQ/CMS/Project//BA-Bio/0031/Pt.I dated 01-03-2016

- 14.1. If KIOSK is BIO enabled, login will be through BIO only and password will not be required
- 14.2. If KIOSK is NOT BIO ENABLED or Crew has been exempted from BIO through Bio data, password will be required for login
- 14.3. After login crew will land on crew activity page.
- 14.4. On selecting Sign ON /OFF
 - 14.4.1. Crew will be checked for sign ON/OFF eligibility (no change)
 - 14.4.2. Valid crew will be checked for unread circular
 - 14.4.3. Circular cleared crew will be taken to BA test page (for BA ENABLED KIOSK) only
 - 14.4.4. Crew will be taken to Caution Order page (with or without BA as the case may be)
 - 14.4.5. rest of the Sign ON/OFF as per existing scheme BA FAIL
 - 14.4.6. In case of BA FAIL
 - 14.4.6.1. IP of that KIOSK is blocked
 - 14.4.6.2. KIOSK screen will become RED
 - 14.4.6.3. Crew is automatically sent to system Nonrun
 - 14.4.6.4. A red icon alert starts flashing on all supervisor consoles of that lobby
 - 14.4.6.5. IP can be unblocked from supervisor console on Thin client
- 14.5. In case of sign OFF, Crew shall be required to take BA test after completing all the Sign OFF data.
 - 14.5.1. After log in Crew will select sign ON/OFF on crew activity page.
 - 14.5.2. Presently for BA enabled Lobby he is taken to BA test. Failing which he is sent to SYS NONRUN. Hence his travel data cannot be captured. Now On selecting sign ON/OFF on crew activity page, crew will be required to fill all data as is the case in BA disabled lobby. After filling all the data crew is required to click on Sign OFF.
 - 14.5.3. Now for BA disabled lobby sign OFF will be completed as per existing practice.
 - 14.5.4. Whereas for BA enabled lobby he will be required to take BA test.
 - 14.5.4.1. If crew pass BA test Sign OFF will be completed and crew status will become rest.
 - 14.5.4.2. If crew fail BA test the sign OFF will be completed but crew status will be in SYSTEM NON RUN and status will be BA FAIL
 - 14.5.4.3. This is essentially required to give mileage even in case of BA fail which is not given at present.
 - 14.5.4.4. In case device malfunctioning crew will come back to Final sign OFF button and test will be repeated. However in such cases data already filled will be retained.
 - 14.5.4.5. If device is finally by passed then clicking on Final sign OFF will complete the sign OFF with temporarily saved data.