

FRD-106: Send 'Account Opened' Email Notification

1. Functionality Summary

Once the customer's account is successfully generated and activated, the system must send an automated 'Account Opened' email to the registered email ID. This email confirms account creation, shares account details (masked), onboarding steps, and security guidelines. The system must retry sending on failure, log all email events, and ensure compliance with security standards.

2. Detailed Functional Description

2.1 Input Fields

Field	Type	Mandatory	Rules
customerId	UUID	Yes	Must exist in CUSTOMER table
email	String	Yes	Must match verified email
accountNumber	String	Yes	Masked except last 4 digits
accountType	String	Yes	SAVINGS_DIGITAL

2.2 Email Sending Flow

```
# ENDPOINT
POST /notifications/sendAccountOpenedEmail

# HEADERS
Content-Type: application/json

# REQUEST
{
  "customerId": "UUID",
  "email": "customer@mail.com",
  "accountNumber": "XXXXXXX1234",
  "accountType": "SAVINGS_DIGITAL"
}

# SERVER LOGIC
1. Validate email format
2. Mask account number (XXXXXXX1234)
3. Load HTML email template
4. Inject dynamic variables:
  "customerName", "maskedAccountNumber", "accountType"
5. Call Email Service Provider (ESP):
  POST /email/send
6. If ESP returns 5xx:
  Retry up to 3 times
7. Log event in EMAIL_AUDIT table
```

```

# RESPONSE (SUCCESS)
{
  ■"status": "SUCCESS",
  ■"message": "Email sent successfully"
}

# RESPONSE (FAILURE)
{
  ■"status": "FAILURE",
  ■"errorCode": "ERR-1064",
  ■"message": "Email sending failed"
}

```

2.3 System Behavior

On success:

- Email is delivered to customer
- Audit record created

On failure:

- Retry email sending 3 times
- If still failing → system logs ERR-1064

On missing template:

- Load fallback email template
- Log warning event

3. Error Codes

Error Code	Description	When Triggered
ERR-1060	Email format invalid	Regex validation fails
ERR-1061	Email not verified	Email not confirmed in DB
ERR-1062	Template missing	HTML template not found
ERR-1063	ESP unreachable	Timeout / 5xx
ERR-1064	Email send failure	Retries exceeded
ERR-1065	Audit save failure	DB insert failure

4. Preconditions

- Account number generation completed (FRD-105).
- Email ID is verified and stored in CUSTOMER table.
- Email Service Provider configuration active.

5. Postconditions

- Email delivered or marked as failed.
- Record created in EMAIL_AUDIT table.

- Onboarding journey marked as COMPLETE if successful.

6. Acceptance Criteria

AC ID	Acceptance Criteria
AC-601	System sends 'Account Opened' email upon activation.
AC-602	Masked account number appears in email.
AC-603	Retry mechanism activates for ESP failures.
AC-604	Failures trigger ERR-1064.
AC-605	Email audit logs must be created.
AC-606	Fallback template loads if primary missing.

7. Data Storage Impact

Table: EMAIL_AUDIT

- customer_id
- email
- email_type ('ACCOUNT_OPENED')
- template_version
- send_status
- attempts
- created_at

8. Non-Functional Requirements

- Email send latency < 2 seconds.
- Support 200 emails/minute.
- Audit logs must be immutable.
- All emails must use TLS encryption.