

```
@startuml
!theme toy
skinparam linetype ortho
skinparam packageStyle rectangle
```

```
' --- CAPA DE DOMINIO (El Corazón - Sin dependencias externas) ---
package "Domain Layer" #f9f9f9 {
```

```
    package "Aggregates & Entities" {
        class User <<Aggregate Root>> {
            - UserId id
            - Email email
            - PasswordHash password
            - PlanType plan
            - Counter emailsSentThisMonth
            + boolean canSend(int amount)
            + void trackUsage(int amount)
        }
    }
```

```
    class Campaign <<Aggregate Root>> {
        - CampaignId id
        - String subject
        - String contentHtml
        - SenderIdentity sender
        - CampaignStatus status
        - ListId targetListId
        + void launch()
        + void markAsFailed(String reason)
    }
```

```
    class Contact <<Entity>> {
        - ContactId id
        - Email email
        - Map<String, String> customFields
        + void updateCustomData(String key, String value)
    }
}
```

```
package "Value Objects" {
    class Email <<ValueObject>> {
        - String address
        + void validate()
    }
    class SenderIdentity <<ValueObject>> {
        - String name
        - String replyTo
        + String formatBranded(String domain)
    }
}
```

```

    }
    enum PlanType {
        FREE(500)
        PRO(50000)
        - int limit
        + int getLimit()
    }
    enum CampaignStatus {
        DRAFT, SENDING, SENT, FAILED
    }
}

package "Ports (Interfaces)" {
    ' Puertos de Salida (Output Ports)
    interface UserRepository <<Port>>
    interface CampaignRepository <<Port>>
    interface ContactRepository <<Port>>
    interface EmailSender <<Port>>

    ' Puertos de Entrada (Input Ports - Opcional en algunas implementaciones,
aquí son los UseCases)
    }
}

' --- CAPA DE APLICACIÓN (Orquestación de Casos de Uso) ---
package "Application Layer" #e3f2fd {

    class CreateCampaignUseCase {
        - CampaignRepository campaignRepo
        + CampaignId execute(CreateCampaignCommand cmd)
    }

    class ExecuteCampaignUseCase {
        - CampaignRepository campaignRepo
        - ContactRepository contactRepo
        - UserRepository userRepo
        - EmailSender emailSender
        + void execute(Long campaignId)
    }

    class ImportContactsUseCase {
        - ContactRepository contactRepo
        - UserRepository userRepo
        + void execute(ImportCommand cmd)
    }
}

```

```
' --- CAPA DE INFRAESTRUCTURA (Detalles de Implementación) ---  
package "Infrastructure Layer" #fff3e0 {
```

```
    package "Persistence Adapters" {  
        class JpaUserRepository implements UserRepository  
        class JpaCampaignRepository implements CampaignRepository  
        class JpaContactRepository implements ContactRepository  
    }
```

```
    package "External Services Adapters" {  
        class AwsSesAdapter implements EmailSender {  
            - SesV2Client sesClient  
        }  
    }
```

```
    package "Security" {  
        class JwtTokenProvider  
        class AuthDetailsService  
    }  
}
```

```
' --- CAPA DE ENTRADA (Drivers / Controllers) ---  
package "Web Layer (Adapters In)" #f1f8e9 {  
    class CampaignController {  
        - CreateCampaignUseCase createUseCase  
        - ExecuteCampaignUseCase executeUseCase  
        + create()  
        + send()  
    }  
    class ContactController {  
        - ImportContactsUseCase importUseCase  
        + batchUpload()  
    }  
}
```

' Relaciones principales

```
CampaignController --> CreateCampaignUseCase  
CampaignController --> ExecuteCampaignUseCase  
ExecuteCampaignUseCase --> EmailSender : "uses Port"  
ExecuteCampaignUseCase --> CampaignRepository : "uses Port"  
ExecuteCampaignUseCase --> ContactRepository : "uses Port"  
ExecuteCampaignUseCase --> UserRepository : "uses Port"
```

' El Dominio no conoce a nadie, la Infraestructura implementa sus Puertos  
JpaCampaignRepository ..|> CampaignRepository  
AwsSesAdapter ..|> EmailSender

@enduml