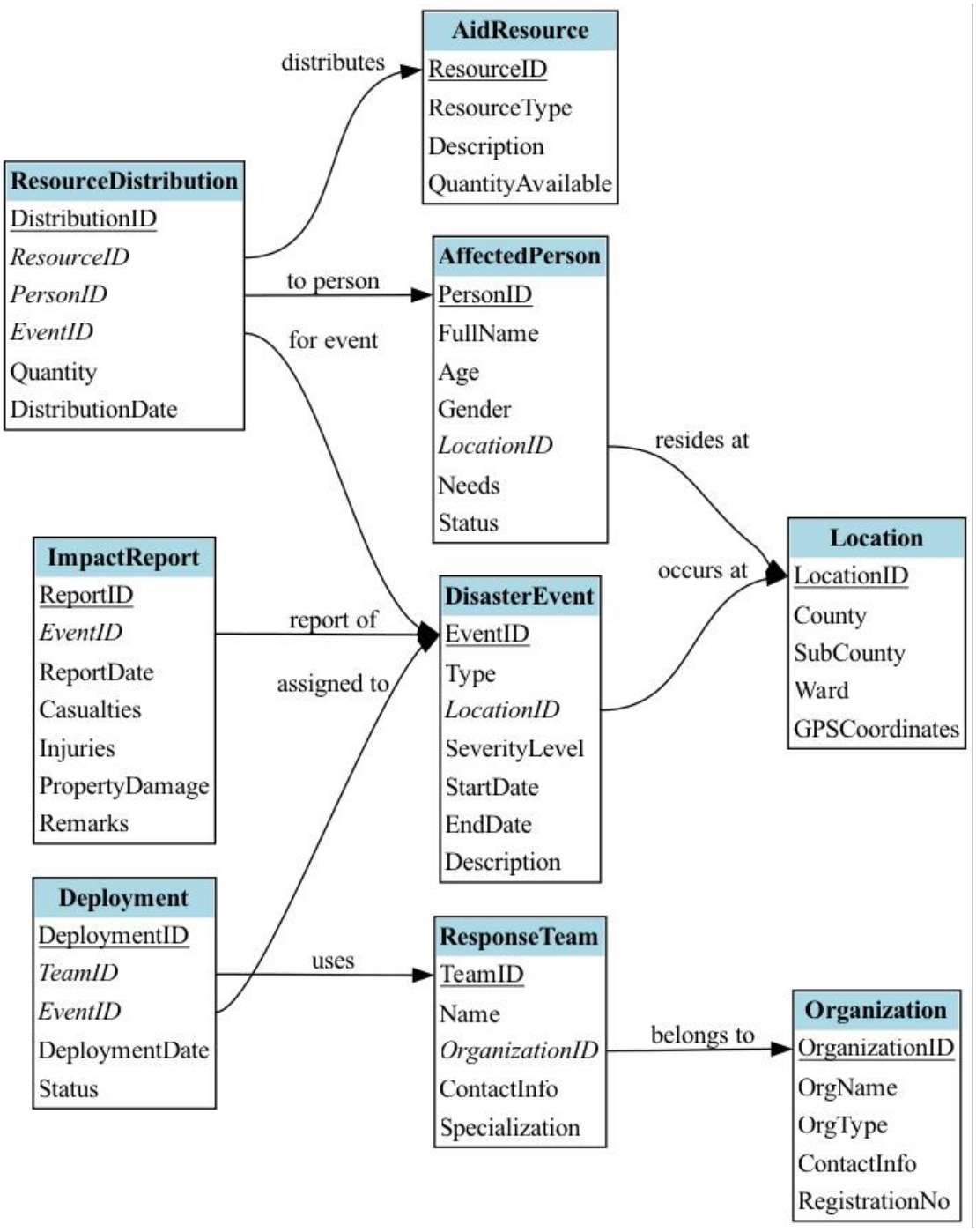
Entity-Relationship Diagram (ERD)



Key Entities & Attributes

Entity	Attributes
DisasterEvent	EventID (PK), Type[flood/drought/fire], LocationID (FK), SeverityLevel, StartDate, EndDate, Description
Location	LocationID (PK), County, SubCounty, Ward, GPSCoordinates, risk_level [high/medium/low])
ResponseTeam	TeamID (PK), Name, OrganizationID (FK), ContactInfo, Specialization
Organization	OrganizationID (PK), OrgName, OrgType, ContactInfo, RegistrationNo,Specialization
Deployment	DeploymentID (PK), TeamID (FK), EventID (FK), DeploymentDate, Status
AffectedPerson	PersonID (PK), FullName, Age, Gender, LocationID (FK), Needs, Status
AidResource	ResourceID (PK), ResourceType[food/medicine/tents], Description, QuantityAvailable,Supplier
ResourceDistribution	DistributionID (PK), ResourceID (FK), PersonID (FK), EventID (FK), Quantity, DistributionDate
ImpactReport	ReportID (PK), EventID (FK), ReportDate, Casualties, Injuries, PropertyDamage, Remarks

Entity Relationships

- □ One DisasterEvent occurs in one Location (Many-to-One)

Explanation: Each disaster event takes place in a single location, but a location can have many disaster events.

- □ One DisasterEvent can have many Deployment (One-to-Many)

Explanation: Each disaster event can have multiple deployments by response teams, but a deployment is always associated with a single disaster event.

- One DisasterEvent can affect many AffectedPersons (via ResourceDistribution or ImpactReports) (One-to-Many)

Explanation: Each disaster event can affect many individuals, with affected persons either receiving aid resources or being included in impact reports.

- One DisasterEvent has one or many ImpactReports (One-to-Many)

Explanation: A disaster event can have multiple impact reports, but each report pertains to a single disaster event.

- One DisasterEvent can trigger many ResourceDistributions (One-to-Many)

Explanation: A disaster event can be the cause of many resource distributions, but each distribution relates to a specific disaster event.

- One Location can be linked to many DisasterEvents (One-to-Many)

Explanation: A location can experience multiple disaster events, but each event happens in one location.

One Location can be linked to many AffectedPersons (One-to-Many)

Explanation: A location can have many affected people, but each person resides in a single location.

- One Organization can manage many ResponseTeams (One-to-Many)

Explanation: Each organization can manage multiple response teams, but each team belongs to one organization.

- One ResponseTeam belongs to one Organization (Many-to-One)

Explanation: Each response team is associated with one organization, but one organization can manage many response teams.

- One ResponseTeam can be deployed to many DisasterEvents (via Deployments)

(Many-to-Many through Deployment)

Explanation: A response team can be deployed to multiple disaster events, and a disaster event can have many teams deployed to it. This relationship is managed through the deployment table.

- One Deployment links one ResponseTeam to one DisasterEvent (Many-to-One for each FK)

Explanation: A deployment is a link between one response team and one disaster event. Multiple deployments can happen between the same teams and events.

- One DisasterEvent can have many Deployments (One-to-Many)

Explanation: A disaster event can have many teams deployed to it, with each deployment representing a single team's involvement.

- One ResponseTeam can have many Deployments (One-to-Many)

Explanation: A response team can be deployed to many disaster events, with each deployment referring to a specific event.

- One AffectedPerson lives in one Location (Many-to-One)

Explanation: Each affected person resides in one location, but each location can have many affected persons.

- One AffectedPerson can receive many AidResources (via ResourceDistribution) (Many

to-Many through ResourceDistribution)

Explanation: An affected person can receive many different aid resources, and

each resource can be distributed to many people. This is a many-to-many relationship through the ResourceDistribution table.

- One AidResource can be distributed to many AffectedPersons (Many-to-Many through ResourceDistribution)

Explanation: A single aid resource (e.g., food, medicine) can be distributed to many affected persons, and each affected person can receive various aid resources.

- One AidResource can be distributed for many DisasterEvents (Many-to-Many through

ResourceDistribution)○ Explanation: Each aid resource can be distributed to multiple disaster events, as

resources may be sent to different events over time.

- One AffectedPerson can receive AidResources related to multiple DisasterEvents (Manyto-Many through ResourceDistribution)

Explanation: An affected person may receive aid for multiple disaster events, and each event can involve resources being distributed to many affected people.

- One ImpactReport is associated with one DisasterEvent (Many-to-One)

Explanation: Each impact report pertains to a specific disaster event, but each event can have multiple impact reports.

- One DisasterEvent can have multiple ImpactReports (One-to-Many)

Explanation: A disaster event can have many impact reports, each providing detailed information about the event's aftermath.

- One ResourceDistribution links one AidResource, one AffectedPerson, and one

- DisasterEvent (Many-to-One for each FK)

Explanation: Each resource distribution entry links an aid resource to an affected person for a specific disaster event. This is managed through the ResourceDistribution table.

- One DisasterEvent can have many ResourceDistributions (One-to-Many)

Explanation: A disaster event can involve many resource distributions, each linked to different affected persons and resources.

- One AffectedPerson can be involved in many ResourceDistributions (One-to-Many)

Explanation: An affected person can receive resources from multiple distributions across different disaster events.

- One AidResource can be part of many ResourceDistributions (One-to-Many)

Explanation: A single aid resource (e.g., food or medical supplies) can be distributed to many affected persons across various disaster events.