Below is your **comprehensive, sentence-by-sentence study note breakdown** of *“Surveillance Notes.docx”*, formatted for clean and professional pasting into **Microsoft Word**. It contains all critical points and is aligned with **CompTIA A+ 220-1102 (Objective 2.1 – Security Measures and Purposes)**.

**Surveillance Technologies – Study Notes (CompTIA A+ 220-1102, Objective 2.1)**

**1. Introduction to Surveillance Systems**

* Surveillance technologies help protect organizations from **physical attacks**.
* Key surveillance tools include:
  + **Video surveillance**
  + **Alarm systems**
  + **Motion sensors**
  + **Magnetometers**

**2. Video Surveillance Systems**

**2.1 General Use:**

* Used both **inside and outside** organizational buildings.
* Provides an **extra layer of security**, enhancing **perimeter defenses**.
* If intruders bypass fences, bollards, or guards, surveillance helps:
  + **Detect their presence**
  + **Direct guards to the location**

**2.2 System Types:**

* **Closed-Circuit TV (CCTV):**
  + Uses **wired connections** to send footage to a **central monitoring point**.
* **IP-Based Cameras:**
  + Can be **wired or wireless**.
  + Provide **streaming video feeds** to a **central console**.

**2.3 Capabilities of Modern Systems:**

* May include:
  + **Motion detection**
  + **Sound detection**
  + **Light detection**
* High-end systems can perform:
  + **Facial recognition** to identify staff or intruders.
* Can be integrated into **broader surveillance/alarm systems**.

**3. Alarm System Types**

**3.1 Circuit-Based Alarm Systems:**

* Triggered when a **circuit is opened or closed**.
* Example: Contact sensors on doors/windows.
  + Opening the door **breaks the circuit**, sending an alarm signal.
* Most **traditional alarm system** type.

**3.2 Motion Sensor Alarms:**

* Detect motion in rooms, halls, or corridors.
* Ideal for after-hours use (e.g., overnight).
* Not suitable for 24/7 operations:
  + May cause **false alarms** in environments like call centers or government buildings.

**3.3 Proximity Alarms:**

* Triggered when **tagged items** move past a sensor.
* Example: RFID-tagged clothing in stores.
  + Walking out with the tag still attached triggers an alarm.
* Useful for securing:
  + **Servers**
  + **Routers**
  + **Switches**
  + **Laptops**
  + It prevents removal from the building.

**3.4 Duress Alarms:**

* Activated **manually by staff under threat**.
* Example: Bank teller presses a hidden button during a robbery.
* Used in:
  + **Banks**
  + **Vaults**
  + **High-risk environments**
* May be **worn by personnel** (e.g., pendants) for quick activation.
* Less common in standard business settings unless high theft/robbery risk exists.

**4. Magnetometers**

**4.1 Function:**

* Used to detect **metal objects**, especially **weapons**.
* Deployed in:
  + **Airports**
  + **Government buildings**
  + **Other high-security areas**

**4.2 Types:**

* **Walkthrough Magnetometers:**
  + Detect metal as users pass through.
  + Indicate location on body via lights/sound:
    - Head, torso, legs, etc.
* **Handheld Magnetometers:**
  + Used for follow-up checks.
  + Swept around the body to find **exact source** of metal.

**4.3 Detection Mechanism:**

* Based on magnetic fields.
* Trigger **lights, alarms, or other alerts** when metal is detected.

**5. Summary of Surveillance Tools**

| **Tool** | **Function** |
| --- | --- |
| **Video Cameras** | Monitor indoor/outdoor activity, assist with incident response |
| **CCTV/IP Feeds** | Centralized monitoring with motion/sound/light detection |
| **Circuit Alarms** | Trigger when doors/windows open |
| **Motion Sensors** | Detect movement, ideal for after-hours security |
| **Proximity Alarms** | Prevent unauthorized removal of tagged equipment |
| **Duress Alarms** | Triggered by staff under threat, alerts security or law enforcement |
| **Magnetometers** | Detect concealed weapons or metal objects |

**6. CompTIA A+ 220-1102 Exam Relevance**

✅ **Objective 2.1 – Summarize various security measures and their purposes**  
Topics covered include:

* **Physical access control mechanisms**
* **Environmental monitoring**
* **Preventive and detective physical security controls**
* **Surveillance system types and configurations**