Click here for X.400 background in Wikipedia

Click here for its set up in Australia, and the fees involved for an individual in 1990.

How many users of X.400 emails worldwide by country

There are zero general or consumer X.400 email users worldwide, as the **X.400 messaging standard** was completely superseded by the **Internet's SMTP protocol** for interpersonal email in the late 1990s and early 2000s. Because it is no longer used for standard consumer or public business email, global or country-by-country user statistics do not exist.

Instead of hosting individual "user accounts," X.400 survives strictly behind the scenes as a specialized, automated infrastructure protocol for system-to-system data exchange in three main industries:

- **Aviation (AMHS):** The global Aeronautical Message Handling System (AMHS) relies on X.400 standards to transmit critical flight plans, weather updates, and air traffic control communication between airports and towers.
- **Electronic Data Interchange (EDI):** In parts of Europe—particularly Germany—companies use X.400 networks (such as Deutsche Telekom's *BusinessMail X.400*) as a highly secure, private connection to exchange corporate B2B transactions like invoices and supply chain orders.
- **Military and Government (MMHS):** Some defence networks use Military Message Handling Systems based on X.400 due to its built-in security features, message prioritization, and strict delivery receipts.

Because these systems are automated or restricted to a tiny pool of highly specialized machine nodes, there is no public tracking of individual human users or country-specific metrics.

Are you researching X.400 for a **legacy systems migration** project, or are you looking for modern **global email usage statistics** (such as Gmail, Outlook, or SMTP metrics)? Let me know so I can provide the right data.

Just interested in usage, ok, by different governments, given the telecommunication's background

X.400 survives almost exclusively as a sovereign government tool rather than a commercial one. Because X.400 was born out of the telecom world—specifically designed by national telecom monopolies (PTTs) under the International Telecommunication Union (ITU)—it matches how governments operate. Unlike the open, collaborative nature of Internet SMTP, X.400 is rigid, hierarchical, highly regulated, and secure.

Governments rely on X.400 across three major domains:

1. NATO and Allied Defence Networks

In military telecommunications, standard email is too fragile and lacks accountability. NATO standardises military communication via a framework called **STANAG 4406**, which is a custom military profile built entirely on top of the civilian X.400 standard. Non-NATO allies (like Australia and New Zealand) use a sister standard called **ACP 123**.

- **Who uses it:** The **United States Department of Defense** (as part of the Defense Message System framework), the **United Kingdom Ministry of Defence**, **Germany's Bundeswehr**, and most European NATO members.
- **Why they use it:**
    - **The 6 Military Precedences:** Civil email only has "high/low" priority. The military X.400 profile expands this to six strict levels: *Deferred, Routine, Immediate, Priority, Flash,* and *Override*.
    - **Mandatory Access Control:** A user cannot mistakenly forward a "Top Secret" message to an unclassified network; the X.400 protocol itself enforces classification boundaries at the packet level.
    - **Low-Bandwidth Tactical Links:** X.400 message handling can be adapted to work over high-frequency (HF) tactical radios for ships at sea or remote outposts where normal internet connections are impossible.

2. Civil Aviation Authorities (Ground-to-Ground)

Every sovereign government's aviation authority uses the **Aeronautical Message Handling System (AMHS)**, which is defined by the UN's International Civil Aviation Organization (ICAO) and built on X.400 protocols.

- **Who uses it:** Agencies like the **FAA (United States)**, **Eurocontrol (Europe)**, **Airservices Australia**, and equivalent national civil aviation authorities globally.
- **Why they use it:** It is the backbone for swapping international flight plans, global meteorological data (METAR/TAF), and air traffic control coordination. It replaces a 1950s text-only telegraph system called AFTN. Because a dropped packet could cause a safety incident, aviation relies on X.400's strict "non-repudiation of delivery" (an unalterable cryptographic receipt proving the receiving tower actually opened the message).

3. Sovereign Public Sector Networks (Legacy Backbone)

During the late 1980s and early 1990s, governments across the world launched initiatives called **GOSIP (Government Open Systems Interconnection Profile)**. They legally mandated that all public infrastructure must use international telecom standards (like X.400) instead of American internet protocols (TCP/IP).

- **United States:** The General Services Administration (GSA) historically managed unique X.400 "Private Management Domains" starting with `P=GOV+` for federal departments (e.g., `P=GOV+DOT` for the Department of Transportation).
- **Germany and Western Europe:** Because national telecom providers (like Deutsche Telekom or France Télécom) were state-owned monopolies, government databases and inter-agency directories were natively hardwired into X.400 backbones (like Germany's *Telebox/BusinessMail X.400*).

The Modern Shift: SMTP Hybridization

While governments love X.400 for its rigidity, maintaining purely X.400 hardware has become incredibly expensive. Today, most governments use a hybrid approach called **MIXER** (RFC 2156) or specialized **Military SMTP** profiles. The internal end-user might type a standard email on a secure laptop, but when that message hits the tactical military backbone or an airport's routing gateway, it is automatically converted into an X.400 packet to ensure guaranteed delivery and classification handling.

Would you like to explore **how the aviation industry (AMHS)** handles these message transitions, or look closer at the **six levels of military email priority**?

Thanks for that. I'll save this page

You're very welcome! If you ever need to dive back into legacy telecom standards, military networks, or aviation tech, I'll be here. Have a great day!

** End of Page