DoD Vision of the Future

USN Senior Communication Engineer
Eugene Joseph Gonzales

DoD Vision of the Future

Comparison of Information Exchange		
	Link-11	Link-16
Addresses	3 Digit, Octal	5 Digit, Octal
Track Numbers	More Than 4,000	More Than 524,000
Track Quality	0-7	0-15
Track Identification	Identity Pri Amp ID Amp	Identity Platform Specific Type Activity Nationality
Friendly Status Data	Limited	Detailed
Position Granularity	500 yds	32 feet
Air Speed Granularity	28 dmh	2dmh
Lines and Areas	No	Yes
"Playing Field"	512 x 512 nm	Worldwide
Relative Navigation	Limited	Detailed
EW	Limited	Detailed

DoD Vision of the Future

	LINK-16	LINK-11	LINK-4A	LINK-4C
Surveillance/WC	YES	YES	NO	NO
Air Control	YES	NO	YES	NO
Fighter-to-Fighter	YES	NO	NO	YES
Secure Data	YES	YES	NO	NO
Extended LOS	YES (Relay)	YES (HF)	NO	NO
Secure Voice	YES (2 Channels)	NO	NO	NO
Jam Resistant	YES	NO	NO	NO
Positive ID	YES	LIMITED	LIMITED	LIMITED
Navigation	YES	NO	NO	NO
Data Forwarding	YES	NO	NO	NO
Flexible Net	YES	NO	NO	NO

DoD Vision of the Future

Lx Band

Frequency Number	Frequency (MHz)	Frequency Number	Frequency (MHz)	Frequency Number	Frequency (MHz)
0	969	17	1062	34	1158
1	972	18	1065	35	1161
2	975	19	1113	36	1164
3	978	20	1116	37	1167
4	981	21	1119	38	1170
5	984	22	1122	39	1173
6	987	23	1125	40	1176
7	990	24	1128	41	1179
8	993	25	1131	42	1182
9	996	26	1134	43	1185
10	999	27	1137	44	1188
11	1002	28	1140	45	1191
12	1005	29	1143	46	1194
13	1008	30	1146	47	1197
14	1053	31	1149	48	1200
15	1056	32	1152	49	1203
16	1059	33	1155	50	1206

DoD Vision of the Future

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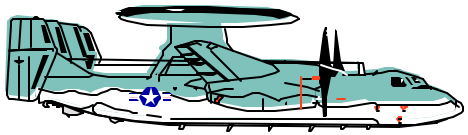
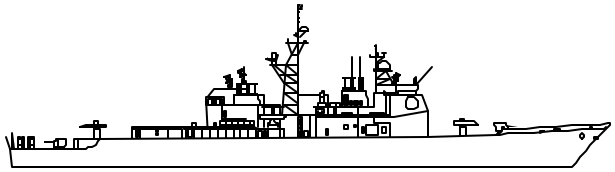
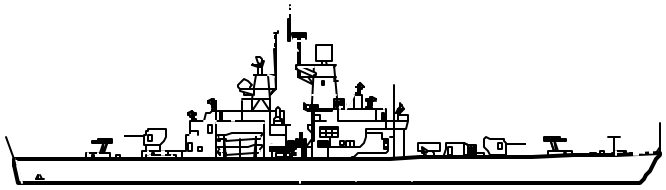


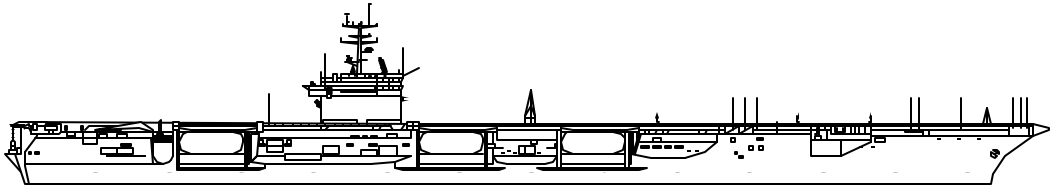
- **Future U.S. Navy Installations**

- **Expanded Warfare Applications**
  - **Strike**
  - **ASW**
  - **ASUW**
  - **TBMD**

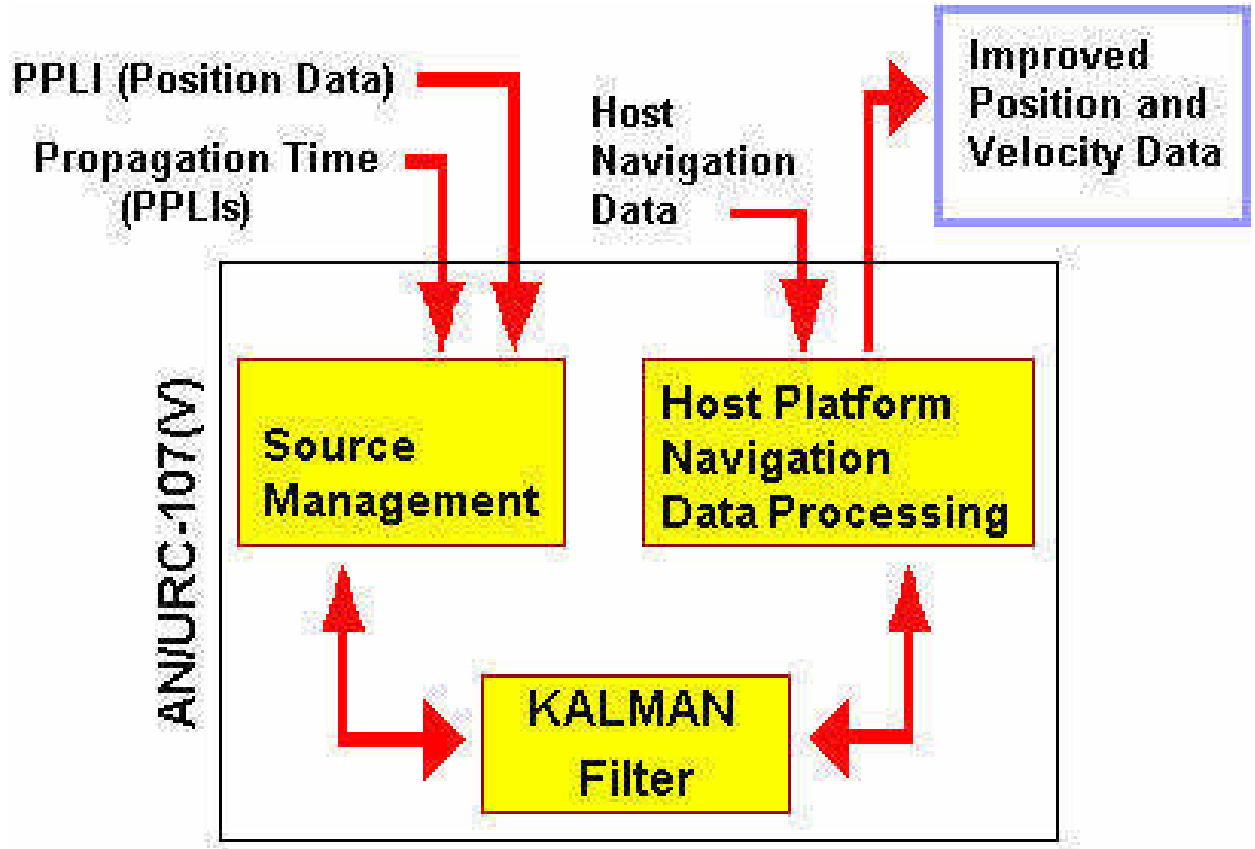


- **LCC**
- **EA6B**
- **F/A-18 (MIDS)**





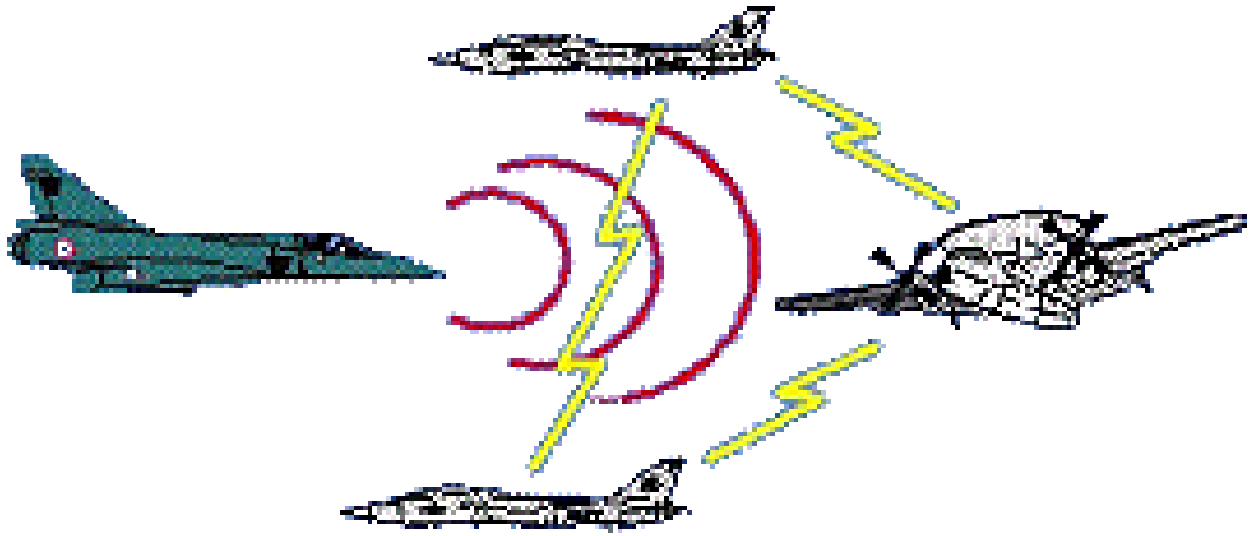
DoD Vision of the Future



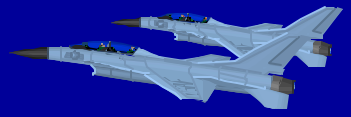
DoD Vision of the Future

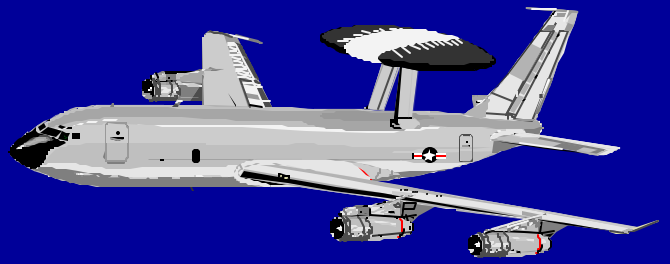
NPG	Function
1	Initial Entry
2	RTT A
3	RTT B
4	Network Management
5	PPLI A
6	PPLI B
7	Surveillance
8	Mission Management
9	Air Control
10	Electronic Warfare
12	Voice A
13	Voice B
14	Indirect PPLI
18	Weapons Coordination
19	Fighter-to-Fighter
27	PPLI (JOINT)
28	Distributed Network Management
29	Residual Message
30	IJMS Position and Status
31	IJMS Message

DoD Vision of the Future



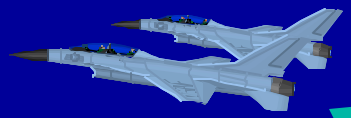
Air Control

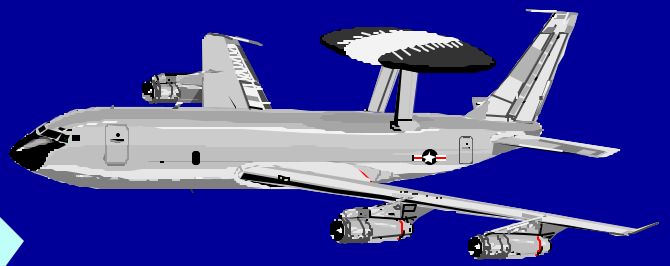




Machine
Receipt
Message

Air Control



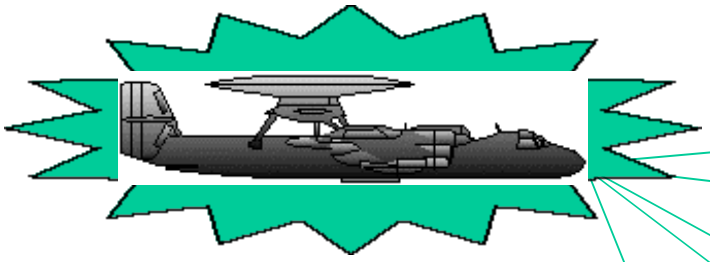


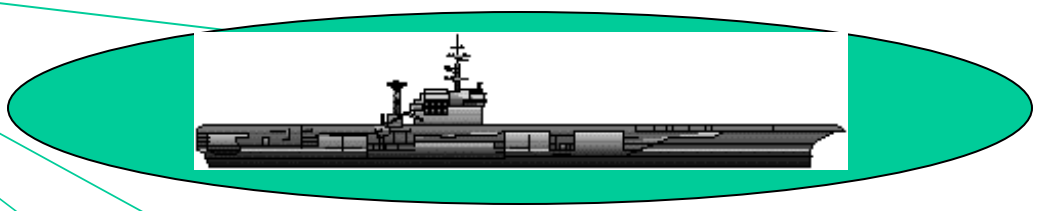
Machine
Receipt
Message

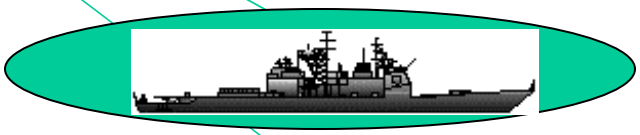
Broadcast
Messages

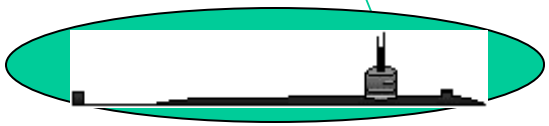
Surveillance,
PPLI

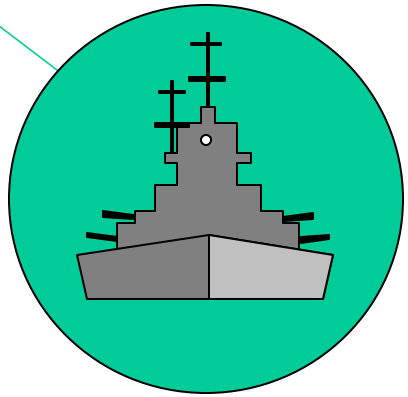
Surveillance Scenario-EMCON





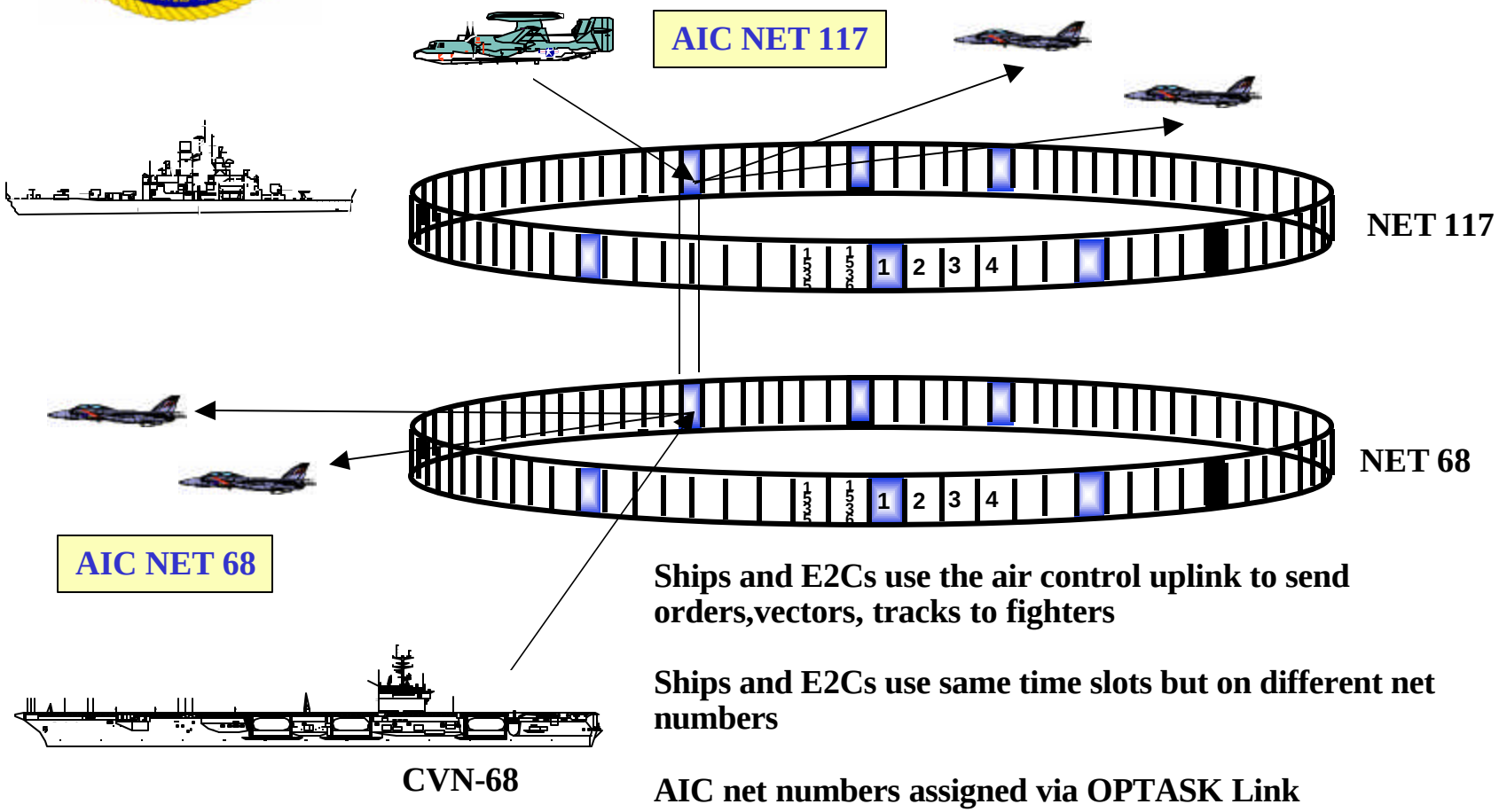






- **Surface C2 Units under EMCON**
- **Situation Awareness (NPG-7) provided by the airborne C2**

LINK-16 NET OPERATIONS (AIR CONTROL UPLINK)



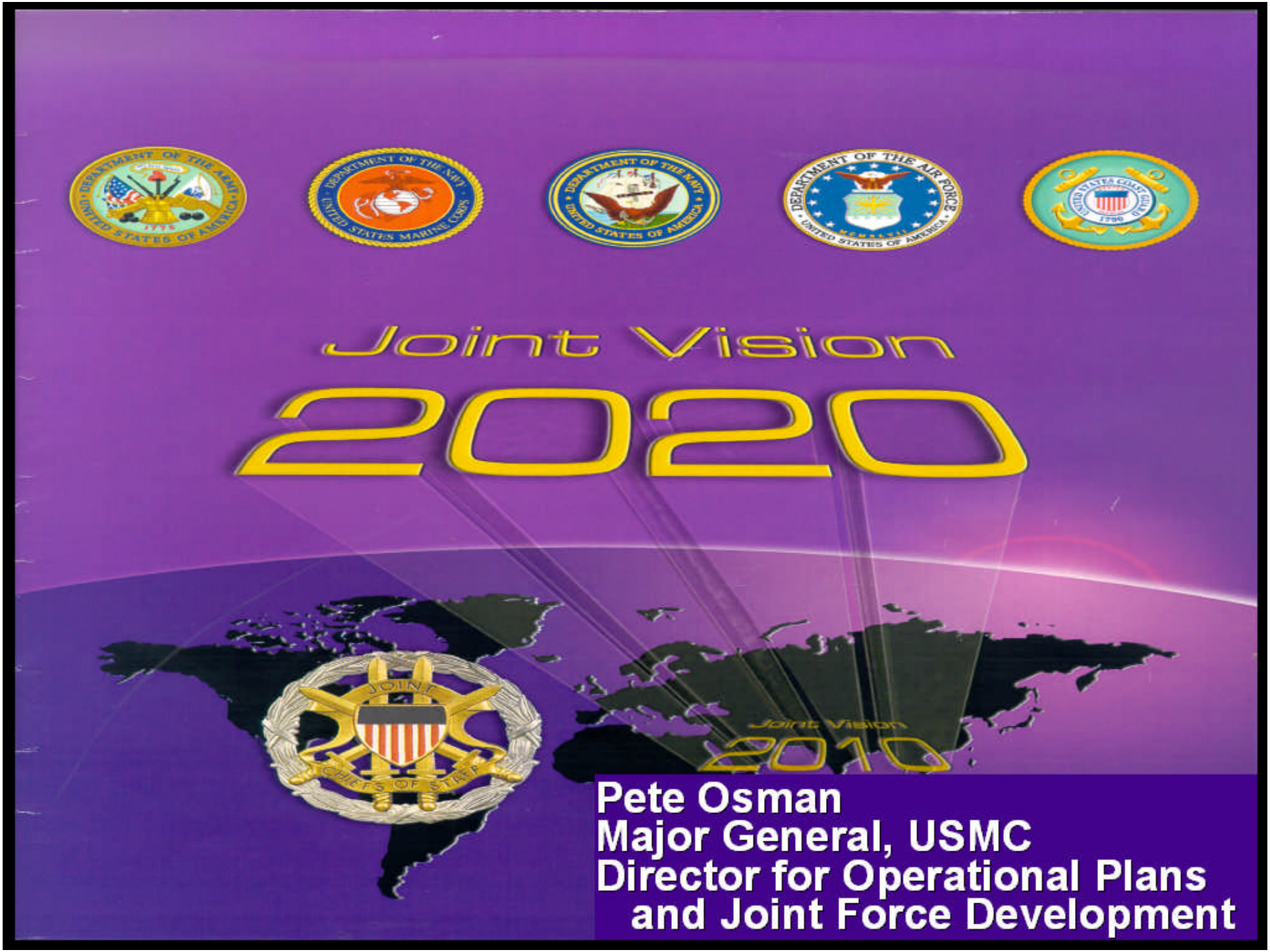
Ships and E2Cs use the air control uplink to send orders,vectors, tracks to fighters

Ships and E2Cs use same time slots but on different net numbers

AIC net numbers assigned via OPTASK Link

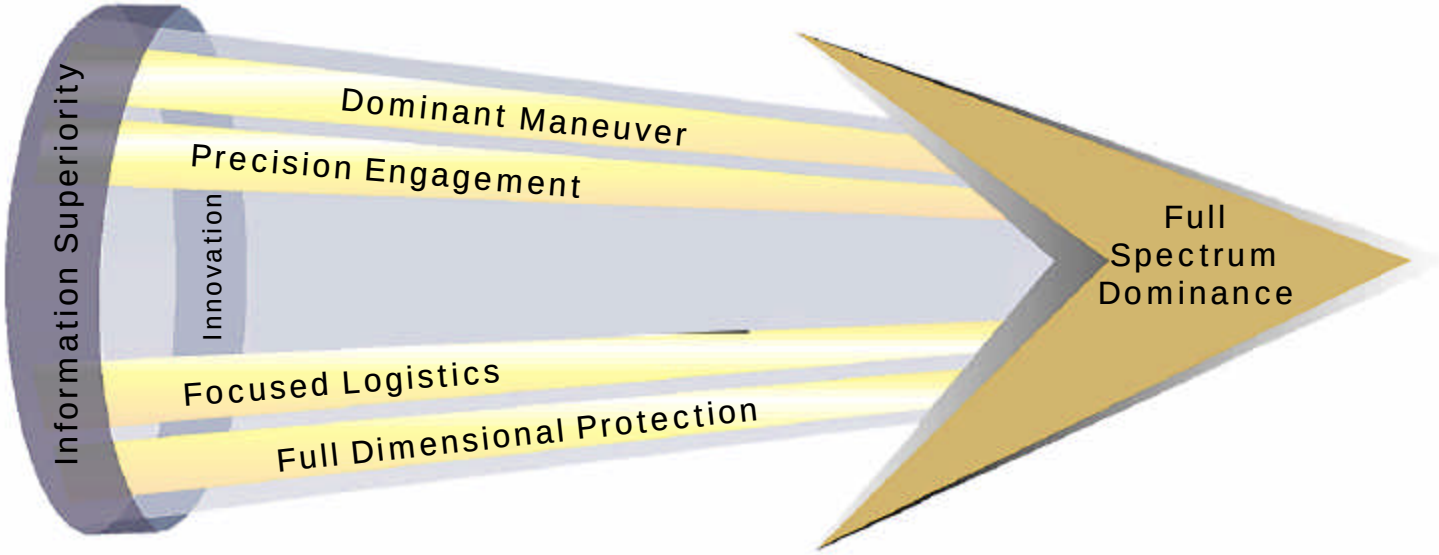
One and only one controller per net

Fighters must dial up to assigned AIC net


Joint Vision
2020
Joint Vision
2010
Pete Osman
Major General, USMC
Director for Operational Plans
and Joint Force Development

DoD Vision of the Future

Joint Vision 2020



Dedicated individuals and innovative organizations transforming the joint force for the 21st Century to achieve **full spectrum dominance** :

- persuasive in peace
- decisive in war
- preeminent in any form of conflict

JV2020 and JV2010-- What's Different?

More Focus on Multinational, & Interagency Interoperability

- Information Operations Highlighted
- As Critical Element of
- Full Spectrum Dominance

Goals

FRIENDLY	TARGET AUDIENCE	ADVERSARY
- Inform - Facilitate - Protect	- Influence	-Influence - Degrade - Destroy - Deny

- Joint C^2 Receives Increased Focus
- Info Superiority Leads To Decision Superiority
- MOOTW Receives Greater Emphasis
- DOTMLPF Innovation Vice Technological Innovation

DoD Vision of the Future

Joint Vision Goal:

-- *Full Spectrum Dominance* --

The ability of US forces, operating unilaterally or in combination with multinational and interagency partners, to defeat any adversary and control any situation across the full range of military operations.

21st Century Security Environment

DEPARTMENT OF THE NAVY
AIR SYSTEMS COMMAND

NAVAL AIR SYSTEMS TEAM
Research & Engineering
4.5 Avionics
THE PULSE OF NAVAL AVIATION

Questions