



## Executive Director's Recommendation

Commission Meeting: July 9, 2020

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<b>PROJECT</b> <b>Ground Circuit Initiative Tower</b> Fort Belvoir, Virginia	<b>NCPC FILE NUMBER</b> 8181
<b>SUBMITTED BY</b> United States Department of Defense Department of the Army	<b>NCPC MAP FILE NUMBER</b> 00:00(38.30)45136
<b>REVIEW AUTHORITY</b> Federal Projects in the Environs per 40 U.S.C. § 8722(b)(1)	<b>APPLICANT'S REQUEST</b> Approval of preliminary and final site development plans
	<b>PROPOSED ACTION</b> Approve preliminary and final site development plans
	<b>ACTION ITEM TYPE</b> Consent Calendar

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### PROJECT SUMMARY

The Department of the Army, Space and Missile Defense Command (SMDC) has submitted preliminary and final site development plans for the installation of a Ground Circuit Initiative (GCI) telecommunication site. The proposed tower will replace an existing tower in the same vicinity. The main structure will be a 120-foot self-supporting tower that will securely house four (4) antennas, three (3) of which are currently mounted on a smaller tower and one (1) additional radio frequency antenna. The existing 70-foot tower does not meet line of site requirements and must be replaced.

The existing site is secured and located in the middle of a large forested area of Fort Belvoir. As such, no clearing or tree removal is required. The Army completed a viewshed study through a balloon test and geographic information systems (GIS) analysis and found the new tower would not have any visual impact on historic resources. Dense forested areas around the installation effectively block views of the structure outside of the base. The applicant has also coordinated with the Federal Aviation Administration (FAA) to confirm there would be no impacts to flight paths to Reagan National Airport (DCA).

### KEY INFORMATION

- The proposed 120-foot tower will replace an existing 70-foot tower located in the same vicinity within Fort Belvoir.
- The project site is currently fenced and secured, and located within a heavily forested area of the base.
- The applicant completed a comprehensive viewshed study through computer analysis and a balloon test and found that views of the tower area negligible outside the base due to the surrounding forested area.

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## RECOMMENDATION

The Commission:

**Approves** the preliminary and final site development plans for the installation of a Ground Circuit Initiative (GCI) telecommunication site located at Fort Belvoir, Virginia.

**Notes** the new antenna tower will replace an existing tower at the same site. The new tower will be approximately 50 feet taller due to line of site requirements. However, viewshed studies indicate there will be no impacts due proposed project as the tower is located within a heavily forested area of the base.

## PROJECT REVIEW TIMELINE

<b>Previous actions</b>	<b>None</b>
<b>Remaining actions (anticipated)</b>	None

## PROJECT ANALYSIS

### Executive Summary

Staff has analyzed the proposed tower replacement and finds that is not inconsistent with the Federal Elements of the Comprehensive Plan for the National Capital. The new tower is located in a secure area adjacent to the existing tower and therefore would not require any tree removal. And while the new tower will be approximately 50 feet taller due to line of site requirements, the Army has completed extensive viewshed studies that show the tower will have limited visibility to areas outside the base. This is due to its located within a heavily forested area of the base. Finally, the Army coordinated with the FAA to affirm there would be no impacts to area flight paths. As such, staff recommends the **Commission approve the preliminary and final site development plans for the installation of a Ground Circuit Initiative (GCI) telecommunication site located at Fort Belvoir, Virginia.**

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## **Analysis**

The proposed project is necessary to accommodate Army communication needs. The proposed new tower will be 120 feet tall and will securely house four (4) antennas, three (3) of which are currently mounted on a smaller tower and one (1) additional radio frequency antenna. The existing tower does not meet line of site requirements and therefore will be replaced.

The existing site is secured and located in the middle of a large forested area of Fort Belvoir. No clearing or tree removal is required. Staff notes the Army completed a comprehensive viewshed study that included a computer generated viewshed model using topography and light detection and ranging (LiDAR) data, as well as a balloon test to document line-of-sight field observations of the balloon and to verify the computer viewshed model. The analysis found the new tower would not have any visual impact on historic resources. Dense forested areas around the installation effectively block views of the structure outside of the base. The applicant has also coordinated with the Federal Aviation Administration (FAA) to confirm there would be no impacts to flight paths to Reagan National Airport (DCA).

The applicant has stated the proposed transmitting antennas comply with the guidelines adopted by the Federal Communication Commission (FCC), the health and safety regulations adopted by Occupation Safety and Health Administration (OSHA) and Defense Information Systems Agency Defense Spectrum Organization.

## **CONFORMANCE TO EXISTING PLANS, POLICIES AND RELATED GUIDANCE**

### **Comprehensive Plan for the National Capital**

After review, staff finds the project is generally consistent with the policies set forth in the Comprehensive Plan, particularly those found within the Urban Design, Historic Preservation and Federal Environment Elements.

### **National Historic Preservation Act**

The Department of the Army has an independent responsibility to comply with Section 106 of the National Historic Preservation Act (NHPA). After analysis of viewshed impacts on sites in the vicinity, the Army determined the undertaking would have no adverse effects on historic properties. The Virginia State Historic Preservation Officer concurred with the finding. The project is located within the environs and therefore NCPC has no independent NHPA responsibility.

### **National Environmental Policy Act**

The Department of the Army has an independent responsibility to comply with the National Environmental Policy Act (NEPA). The project proposes to replace an existing tower in approximately the same location. No tree clearing would be required and no visual impacts were

identified. The Army has determined the project qualifies for a categorical exclusion. The project is located within the environs and therefore NCPC has no independent NEPA responsibility.

### **ONLINE REFERENCE**

The following supporting documents for this project are available online at [www.ncpc.gov](http://www.ncpc.gov):

- Project Synopsis

Prepared by Matthew Flis  
07/01/2020

### **POWERPOINT (ATTACHED)**

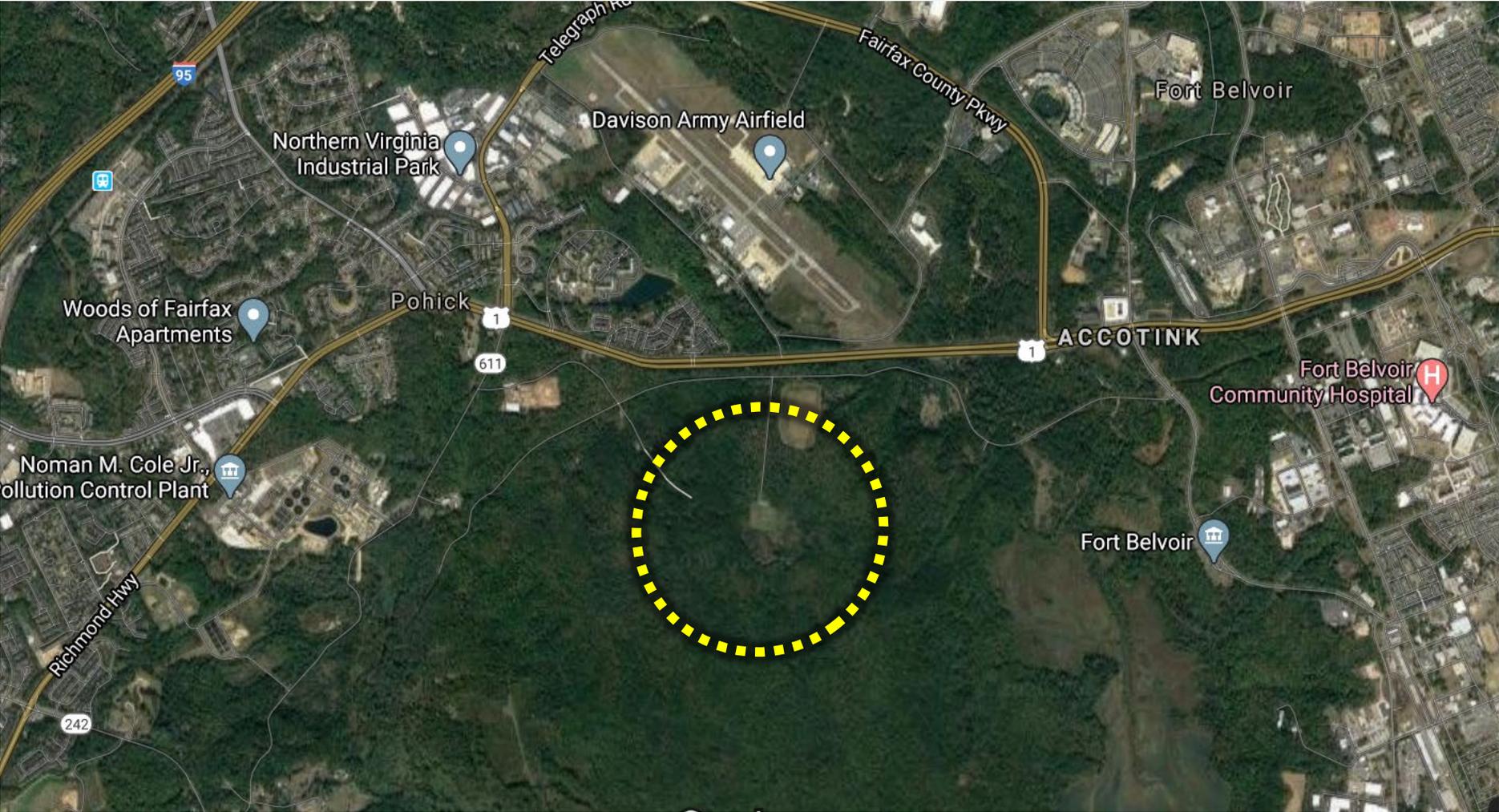
# Ground Circuit Initiative Tower

Fort Belvoir Virginia

Approval of Preliminary and Final Site Development Plans

United States Department of Defense

# Project Site



# Existing Tower Location



# Proposed Tower Location

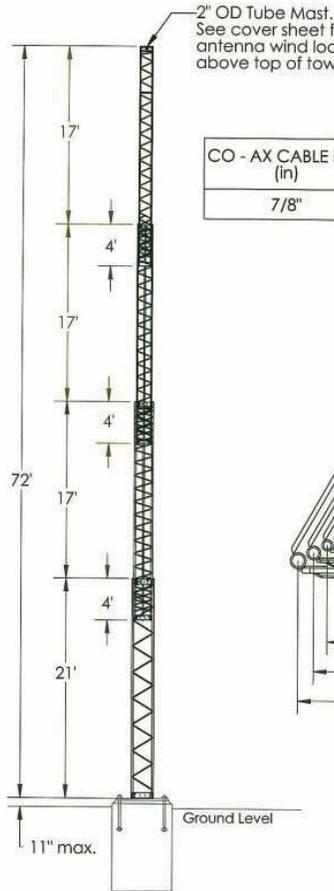




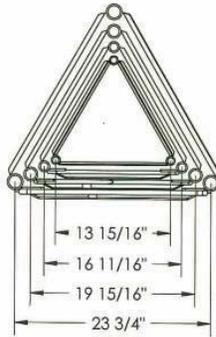
## HDX-572 TOWER ELEVATION

Z

SECTION NO.	NO. 8 BASE	NO. 7	NO. 6	NO. 5 TOP
LEG SIZE	PIPE 1.9" OD X 0.2" WALL	PIPE 1.66" OD X 0.191" WALL	PIPE 1.315" OD X 0.179" WALL	PIPE 1.05" OD X 0.154" WALL
DIAGONAL SIZE	5/8" SOLID ROD	1/2" SOLID ROD	7/16" SOLID ROD	3/8" SOLID ROD

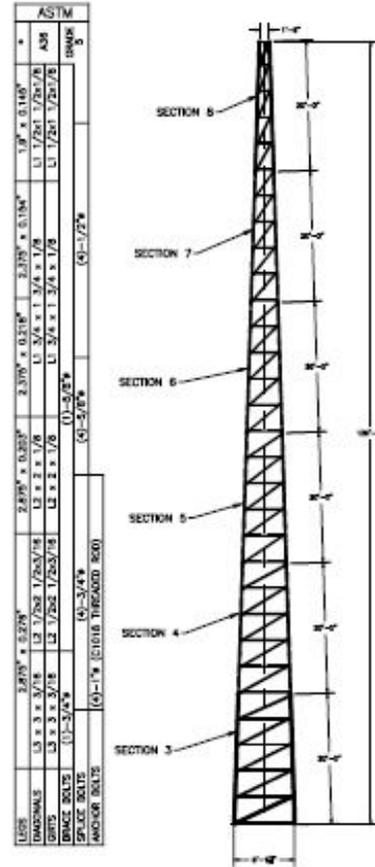


CO - AX CABLE DIA. (in)	MAX. QUANTITY
7/8"	1



Plan View  
No Scale

Elevation View  
No Scale



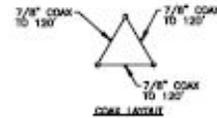
According to ANSI/ISA-95.2-1996

Code	Flat Plate Area	Weight	Elevation
No ice 52.0 sq ft	26.89 sq ft	1200 lbs	120 ft
1/2" ice 60.0 sq ft	36.33 sq ft	1800 lbs	120 ft
No ice 100.0 sq ft	55.56 sq ft	3000 lbs	120 ft to 60 ft
1/2" ice 120.0 sq ft	66.67 sq ft	3600 lbs	120 ft to 60 ft

(3) - 7/8" COAX - Elevation 0 ft to 120 ft  
Coax to be equally distributed to three tower faces  
Climbing Ladder Elevation: 0 ft to 120 ft

Code	Flat Plate Area	Weight	Elevation
No ice 55.0 sq ft	32.59 sq ft	1200 lbs	120 ft
1/2" ice 72.0 sq ft	45.00 sq ft	1800 lbs	120 ft
No ice 104.0 sq ft	57.76 sq ft	3000 lbs	120 ft to 60 ft
1/2" ice 124.0 sq ft	68.89 sq ft	3600 lbs	120 ft to 60 ft

(3) - 7/8" COAX - Elevation 0 ft to 120 ft  
Coax to be equally distributed to three tower faces  
Climbing Ladder Elevation: 0 ft to 120 ft



\* PIPE LEGS 42 KSI MIN YIELD  
TO GA TUBE LEGS 30 KSI MIN YIELD



INTERIOR BRACING  
- NOT REQUIRED -

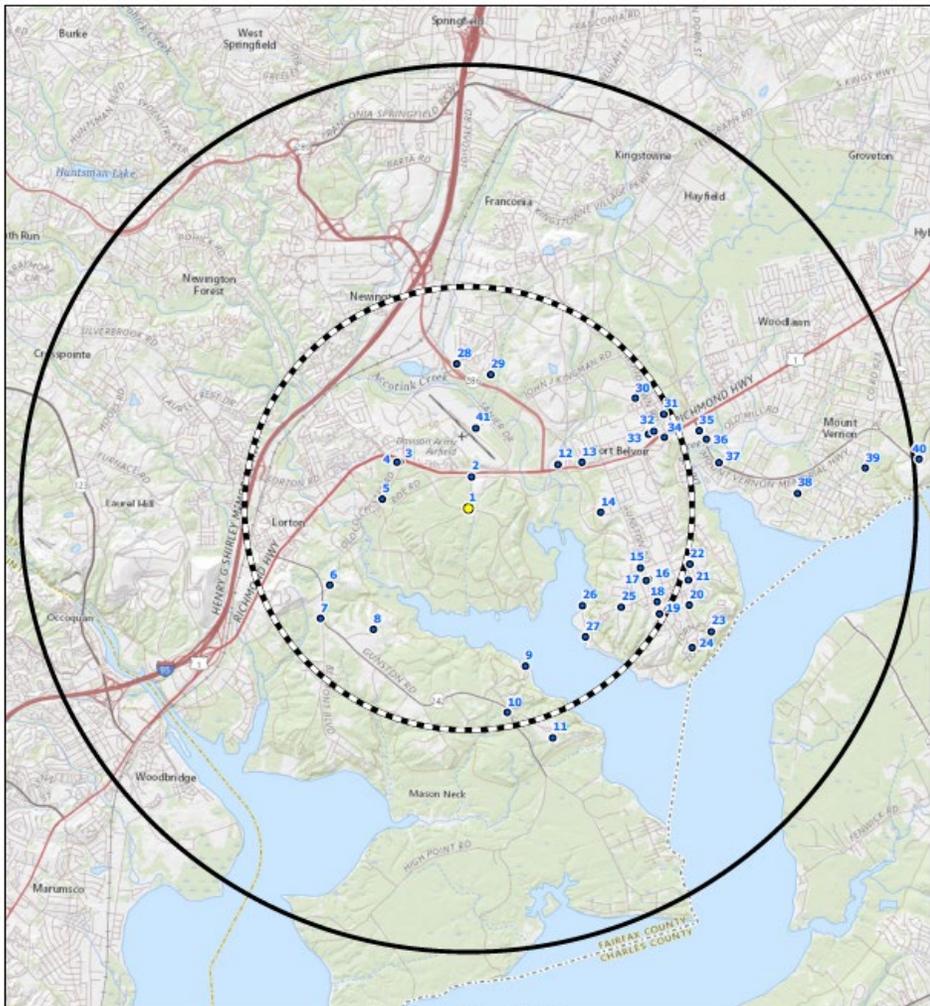
FOUNDATION REACTIONS  
TOTAL MOMENT: 495 FT-KIPS  
TOTAL SHEAR: 7 KIPS  
TOTAL DOWNLOAD: 13 KIPS

AMERICAN TOWER COMPANY	
50 9201 - 2200	
P.O. Box 22, Omaha, NE 68122	
Telephone	402-426-1000
FAX	402-426-1001
Website	www.ameriantower.com
Year	1982
City	Omaha, NE
State	NE
Country	USA
120" HEAVY	
Rev	DATE
1	08/19/06
DWG NO. 1055	

# Balloon Test



# Viewshed Analysis

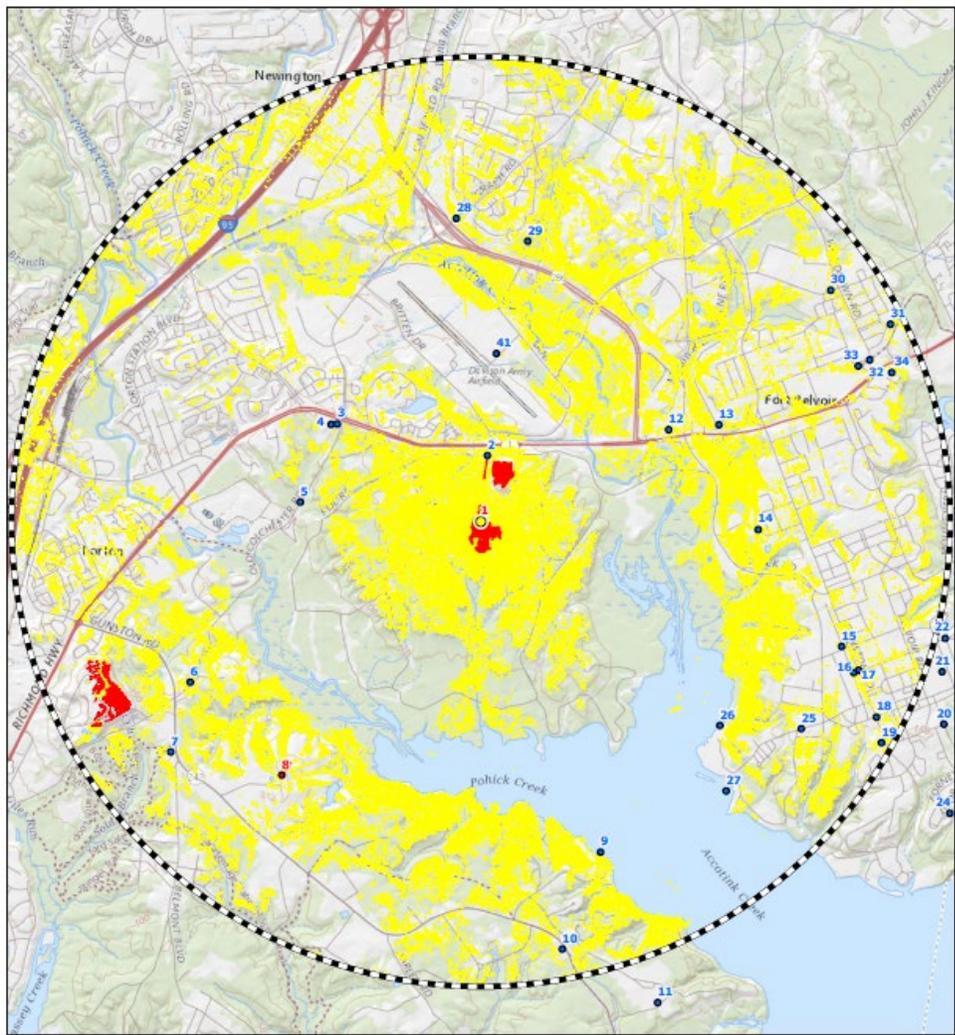


Viewshed Study for USAMDC Tower  
 Southwest Area, Fort Belvoir  
 Fairfax County, Virginia  
 Study Area Map

MSR: 1:82,000  
 SRG: NAD 1983 UTM Zone 18N Meter  
 0 0.5 1 1.5 2 Kilometers  
 0 0.5 1 1.5 2 Miles

Legend:  
 TOWER LOCATION  
 FIELD OBSERVATION POINT  
 BUFFER (2.5 MI)  
 STUDY AREA (5 MI)

R. CHRISTOPHER GOODWIN & ASSOCIATES, INC. | WWW.RCGOODWIN.COM | 1.800.340.2724 | KRAY, 11.20.2019



Viewshed Study for USAMDC Tower  
 Southwest Area, Fort Belvoir  
 Fairfax County, Virginia  
 Viewshed Map (Overview)

MSR: 1:40,000  
 SRG: NAD 1983 UTM Zone 18N Meter  
 0 0.25 0.5 0.75 1 Kilometers  
 0 0.25 0.5 0.75 1 Miles

Legend:  
 TOWER LOCATION  
 BUFFER (2.5 MI)  
 FIELD OBSERVATION POINT  
 VISIBLE FROM GROUND  
 VEGETATIVE/STRUCTURE SCREENING (VISIBLE ONLY FROM TOP OF CANOPY)  
 VISIBLE FROM GROUND  
 NOT VISIBLE FROM GROUND

# FAA Evaluation

